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THE UNIVERSITY OF ALBERTA

A psychosocial analysis of adolescents who express frequent worry over global issues.

by

R. Christopher B. Lewis

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A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA
SPRING, 1990

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled A psychosocial analysis of adolescents who express frequent worry over global issues submitted by R. Christopher B. Lewis in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

RH Short
(Supervisor)

J Mitchell

Susan Goldberg

Date: April 25 1990

Dedication

This thesis is dedicated with love to parents: my parents Reg and Georgie,
and their parents as well; for parents are the source of inspiration as we face an uncertain
future and my parents raised me with the greatest gifts of all:
curiosity for the mysterious,
concern for the suffering,
and a belief in my personal potential to grow and learn.

Abstract

Since the mid 1960s a growing number of psychologists have expressed concern over the negative psychological impact that can stem from living with the threat of nuclear war, especially with relevance to the adolescent experience. Unfortunately, little is known about the adolescent who expresses excessive fear or worry over nuclear weapons and their use. Therefore, the general purpose of this thesis is to provide an in-depth psychosocial profile of the adolescent who reports frequent fear and preoccupation with the threat of nuclear war. The thesis begins with a review of the research addressing psychological aspects of adult and adolescent perceptions of the nuclear threat. Two opposing hypotheses emerge from this literature review: the Pathogenic Disorder Hypothesis, which suggests that the nuclear threat is having a negative impact on the psyche of youth, and the Empowerment Hypothesis, which suggests that expressing fear over the nuclear threat is healthy and adaptive. The absence of reliable evidence to distinguish between the validity of either perspective demonstrates the need for the research presented in this thesis. Using the Canadian Children's Concern About the Future Survey, a sample of 412 Edmonton Junior and Senior high school students were surveyed in the spring of 1989. Of these 412 students, 58 were judged to be Frequent Worriers. In-depth interviews with a volunteer group of these frequent worriers (*n*=21) yielded the following summarized results: Children who report frequent worry over the nuclear threat do not appear to come from a specific socioeconomic bracket or highly political social-environment. However, they clearly demonstrate a greater sensitivity to global issues. As measured by normative instruments, they have greater-than-average self esteem and meaning in life, and tend to be internalized in their locus of control. They demonstrate no unusual levels of trait anxiety, although the specific threat of nuclear war continues to make them extremely anxious. They appear to have healthy perceptions of the future and indicate a tendency toward a political activism position. On the other hand, they appear to have very few effective psychological coping strategies when confronting their specific fear of the nuclear threat. Implications of research findings are discussed with relation to Peace Education and the need for modifying current theories of adolescent anxiety.

Acknowledgments

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A psychosocial analysis of adolescents who express frequent worry over global issues.

I. Purpose and relevancy of research.

The purpose of this thesis is to provide an in-depth descriptive study of adolescents who report that they worry frequently over sociopolitical issues. The threat posed by the international proliferation of nuclear weapons represents just one of many contemporary issues that has caught the attention of today's youth. For this reason, this thesis will focus on adolescent anxiety over the nuclear threat. However, in an attempt to deepen our understanding of adolescent anxiety and how it affects their behavior, additional consideration will be paid to other adolescent worries such as unemployment, job/career planning, pollution, and the AIDS epidemic.

This chapter will deal with an exploration of some of the recent psychological literature addressing the nuclear threat. The second chapter will present a review of research findings on adolescent perceptions of the nuclear threat. Trends indicated in the literature review will demonstrate the need for further research to address speculation over children's reactions to the threat of nuclear war. The remaining chapters of this thesis present the research designed to address such speculation, as well as the results, discussion of results, and implications of this research.

Introduction

Psychological research in nuclear phenomena: 1945 to present

Since the introduction of the nuclear age in the mid 1940s, the psychological establishment has maintained varying degrees of interest in the social-psychological implications of "living with the bomb" (Wagner, 1985). A flurry of psychological literature followed the military deployment of atom bombs in Japan, 1945. Most of this post war research explored aspects of adapting to the psychological ramifications of this new form of conflict. Commitees and reports were prepared to discuss such issues as civilian control in the case of a nuclear attack, thus underscoring the existing American political belief that atomic war with the USSR was inevitable. By the late 1950s, psychologically-oriented research was directly addressing aspects of fear reduction, attitude assessment, and the treatment of psychological casualities of a nuclear conflict. Morawski and Goldstein (1985), suggested that research of this nature largely supported a "socialization" of the public to the benefits of nuclear energy and the cold war position of nuclear deterrence:

> It was not suggested that "fear suppression" might in some way be a maladaptive response. The surveys explicitly claimed value-neutrality while sometimes revealing a bias to promote both public concensus with the government policy and abdication of public opinion to expertise. (p. 279)

During the early 1960s, the psychological literature gradually moved away from a "preparation" position, and toward a "prevention" position with regards to nuclear war (e.g., Frank, 1960; Osgood, 1962; White, 1965). Most likely due to the tension created by the Bay of Pigs fiasco in 1961 and the Cuban Missile Crisis in 1962, psychologists began to criticize the reliability of political decision making in certain foreign affairs (see Janis, 1973). At around this time a number of clinical psychologists initiated the first explorations of child and adolescent fear of the nuclear threat (e.g., Escalona, 1963; Schwebel, 1965). These studies will be explored in a greater depth in chapter 2.

A period of political detente began with the Soviet-American agreement on the Partial Test Ban Treaty (1963), which somewhat lessened political tensions. From the mid 1960s to the late 1970s psychological analyses of the nuclear threat virtually ceased to exist. American concern over the existence of "the Bomb" was no doubt offset by the alternative political concerns of domestic interracial conflict, the Vietnam war, and the rise of feminist issues.

Since the early 1980s a sudden resurgence of professional concern over living with the nuclear threat appeared in the psychological literature. There can be little doubt that this literature was directly a result of the tension caused by the increase in antagonistic political rhetoric of the Reagan administration. This surge in interest could also have been attributed to the perception that the Soviets had reached nuclear parity with the United States (Kramer et al., 1983). As the decade came to a close, the innovative approach to arms control demonstrated by Soviet leader Mikhail Gorbachev dramatically warmed the international cold war atmosphere. The long term impact of these developments on superpower relationships, and subsequent effect on psychological perceptions of the nuclear threat remain to be seen.

The enduring presence of nuclear worries in the general population

Surveys in the United States suggested that the dramatic swings in foreign political attitude were not mirrored in the attitudes of the American population. Kineberg

(1984) reported that the general view toward the importance of the nuclear freeze concept remained constant since 1945. Still, he suggested that the previous underlying sense of helplessness vis à vis the nuclear threat was becoming overtaken by a feeling of concern and political involvement by the mid 1980s.

Nevertheless, changes in public opinion toward more specific themes within the nuclear world have been [illegible]ed by psychohistorians. In their analysis of existing survey data, Kramer, Kalick and Milburn (1983) isolated three major "nuclear" themes that appeared in various surveys extending from 1945 to 1982. First, surveys tapped various behavioral dispositions toward the building of nuclear weapons and their use. For example, questions were asked about whether an individual would seek employment in a nuclear weapons factory. A second realm of inquiry investigated various cognitions toward nuclear phenomena such as the arms race and the likelihood of war. A third general area of study dealt with the emotional reactions of respondents to nuclear weapons.

Survey results, taken from 1945 to 1982, suggested that the majority of each sample approved of the strategic use of atomic weapons on Japan. However, the data indicated more curious trends as well: In the first few decades following the Japan deployments, younger survey respondents were more likely to reject the use of the weapons when compared to their elders. But this "generation gap" appeared to diminish in the mid 1980s, with more members of the younger age approving of the 1945 use of atomic bombs and older individuals increasingly rejecting any justification of their use. Kramer et al. concluded that this trend might suggest a recent tendency toward conservative leanings in the younger population.

Kramer et al. reported that those in the general public who claimed to experience worry over the nuclear dilemma were in a clear minority (28%) by the mid-1980s. But it is important to note that this group nearly doubled its size since 1958. In addition, 66% to 75% of the surveyed public believed if a major conflict occurred it would escalate to a military nuclear exchange.

The observations of Kramer et al. underscore the incessant nature of concern over nuclear weapons; although North American society has passed through various stages of "nuclear awareness" from the post-war era to the 1980s, surveys have continually demonstrated the pervasive impact of potential nuclear war on contemporary living. Although one valid criticism of survey research is that the polls themselves could have created concern over the threat, it is much more likely that the surveys were reactionary to the cold war rhetoric and decision-making that subsequently fired general concern in the population (Fiske, Fischhoff, & Milburn, 1983).

Nuclear research in the 1980s: the medical paradigm gains ground

A significant proportion of the psychological literature of the 1980s has dealt with the attitudes of the average citizen who attempts to carry on with "life as usual" in the face of nuclear destruction. A major spokesman in this area is psychiatrist Robert J. Lifton. Lifton has been extremely influential in focusing psychology on the specific factors that allow us to cope (effectively or not) with the threat. His interest in the ramifications of the nuclear threat began with interviews of Japanese survivors of the American bombings (Lifton,1968). The survivors frequently mentioned a behavioral response to the disaster that resembled a combination of denial, withdrawal and shock. Lifton referred to this phenomenon as Psychic Numbing. He considered it to be

> ...a closing off of the mind so that no more horror could enter it. People witnessed the most grotesque forms of death and dying all around them but felt nothing. A profound blandness and insensitivity, a "paralysis of the mind," seemed to take hold in everyone. (1982, p. 110)

However, shortly after observing the numbing phenomenon in the Hiroshima survivors, Lifton noted that a similar form of denial was manifesting itself in the daily behavior of contemporary individuals. When addressing the nuclear threat, Lifton found that people generally did not express the level of concern, compassion and judgment that he expected. Although "Psychic Numbing" appears to be a combination of the classic Ego defense mechanisms of repression and denial, Lifton (1982) believed that one general term was required to capture the "diminished feelings" of those directly confronting the threat of nuclear war. He considered Psychic Numbing to primarily be a function of image exclusion; that is, the images surrounding a nuclear confrontation were either too painful or were simply too unprecedented to allow for the completion of vivid internal schema of nuclear war. This consideration would lead to subsequent speculation that those who have successfully *overcome* their Psychic Numbing also have clearer internal images of a nuclear exchange (Fiske, Pratto & Pavelchak, 1983).

Lifton suggested that we are able to maintain our levels of Psychic Numbing due to the existence and maintenance of certain "nuclear illusions." These illusions consist of erroneous beliefs about nuclear strategies, such as the effectiveness of civil defense procedures, or the belief that adequate medical help will be available for survivors of a nuclear attack. The power of these illusions to protect individuals from the fear of nuclear war is bolstered by the existence of "nuclearisms:" general patterns of argument supporting nuclear weapons that are based on a uncritical acceptance of their protective power. These views of Lifton lead to further speculation about the individuals who are less likely to endorse nuclearisms or fall prey to illusions; one might assume that they will also be the people who are cautious in accepting the conciliatory claims of politicians, and, consequently, express more fear over the nuclear threat.

From Lifton's perspective, "psychic numbing" and the use of a defense mechanism such as denial in dealing with the nuclear threat was a psychogenic disorder.

However, others have suggested that the use of such coping strategies is neither unconscious nor maladaptive when considering the magnitude of the threat (Tizard, 1989). Nevertheless, Lifton joined the ranks of many other professionals to support the contentious belief that living in the age of nuclear weapons leads to a sense of futurelessness, especially experienced in youth (Beardslee & Mack, 1982; Escalona, 1963, Schwebel, 1965). Lifton claimed that from the age of five, children were being introduced to "images of extinction:" patterns of thought that recognised the fragility of future survival and thus producing an undercurrent of day-to-day insecurity. These images could manifest themselves in numerous ways: in cynical remarks about the future of the environment to the themes of global destruction that surface in many video/arcade games. According to Lifton, the combined effect of this extinction imagery was the perceived loss of traditionally-held paths to immortality. Indeed, pre-nuclear conceptions of the 'timelessness" of our lives, whether defended from a rational, emotional or spiritual base, do appear to have been threatened by the reality of nuclear weapons (Hesse, 1986). For Lifton, this "new awareness" threatened the development of healthy personalities. The implications of Lifton's thoughts are numerous, especially when one considers contemporary adolescents who are grappling with the task of forming an identity in a complex and apparently hostile society.

Another personality-related concern vis à vis the nuclear threat additionally supported the view that the threat was best analysed from a medical model, or psychiatric, paradigm. This concern found it's genesis in the dominant assumption that long-term exposure to a traumatic agent (such as the nuclear threat) results in detrimental effects on mental health (Klineberg, 1984; Tizard, 1984, 1989). Only recently has concrete evidence surfaced to suggest a relationship between the perception of the threat and subsequent maladaptive behavior:

As part of a study of young adults (average age, 22 years), Newcomb (1986) explored possible relationships between a 15 item "Nuclear Attitudes Questionnaire"

(NAQ) and such measures as reported drug use, depression, and satisfaction in life. An exploratory factor analysis suggested a four-factor representation of the questionnaire data: level of nuclear concern, fear of the future, support for nuclear energy, and denial of nuclear threat. Further analysis indicated that significantly high intercorrelations between the four factors supported the existence of a second order construct, referred to as "nuclear anxiety." Newcomb reported that nuclear anxiety was, in turn, significantly related to less purpose in life, less life satisfaction, more powerlessness, more depressed thoughts, and increased drug use (all these latter variables were measured with published objective measures or through the use of survey items created by Newcomb).

The research of Newcomb (1986) is the only data currently published that attempts to demonstrate clear associations between living with the threat of nuclear war and maladaptive behavior. Many other writers have attempted to draw our attention to a possible relationship between "nuclear anxiety" and decreased quality of life, but for the most part this literature is based on professional opinion and psychological theorizing (e.g., Borgenicht, 1985; Frank, 1986a; Mayton, 1986). Keeping this in mind, a certain amount of caution still needs to be exercised when considering the correlational data of Newcomb. Causal associations between the variables exceed the limitations of the data. As demonstrated in the following research of Bachman, Johnston and O'Malley (1984), a longitudinal analysis of the phenomena constitutes the only research design that could examine causal impact of nuclear anxiety on human behavior.

Bachman et al. reported significant changes in "mental health" trends between the years of 1975 and 1982 while administering an extensive survey to American high school seniors (see also Bachman, 1983; Diamond and Bachman,1986). In a systematically sampled population of older adolescents (average sample size per year = 17,500) Jerry Bachman attempted to discover changes in attitudes and health-related behaviors on a longitudinal basis. Although only a small part of the "Monitoring the Future" (MtF) survey, Bachman isolated a number of nuclear-related questions that appeared to suggest that a "nuclear anxiety" construct deserved careful examination. In 1989, Bachman and a colleague suggested that one possible factor driving nuclear anxiety was a sense of despair that was rooted in two significant elements: the perceived likelihood of nuclear war and the belief in the human capacity to come through "tough times" (Diamond and Bachman,1986). The researchers noted that this nuclear-related concept of "despair" had some interesting correlates. In contrast to the results of Newcomb (1986) that suggest a tendency to increase drug use, Diamond and Bachman reported a trend in high school seniors to use marijuana less. On the other hand, these same seniors showed increased interest in materialistic gain of property and money. Other correlates of despair included lowered interest in government, distrust of authority, aversion to political involvement, jaundiced views of peers, and a devaluation of friendships. This data was the first of its type to demonstrate possible longitudinal effects of living with the threat of nuclear war. Unfortunately, it also appears to be the only existing longitudinal data based on representative samples. As a result, many more questions than answers remain to be addressed when confronting the medical paradigm perspective toward the threat of nuclear war and mental health.

Psychologists have also been exploring the personality characteristics that distinguish individuals who cope effectively with the threat from those who do not. Research of this type addressed attitude formation in activists and how these attitudes compared with those of non-activists or survivalists (those who believe nuclear war is inevitable and survivable). These varying approaches toward coping with the threat imply differing models of mental health management.

For example, Tyler and McGraw (1983) attempted to uncover the psychological interpretations of social issues that contribute to subsequent socio-political involvement in the nuclear issue. The researchers suggested that individuals pass through a stepwise progression toward a final causal or moral attributional style. The first step deals with the level of perceived risk of nuclear war. Preventionists more than survivalists are likely to see nuclear war as an actual possibility in their lifetime. Although one's political orientation contributes to the view one takes toward nuclear weapons, Tyler and McGraw placed greater emphasis on the individual's perception of efficacy in determining the final stance one will take vis à vis nuclear policies: preventionists are more likely to report that nuclear confrontations can be prevented and cannot be survived while survivalists adopt the view that nuclear war *can* be survived but not prevented. These differing perspectives lead to equally different attributions: preventionists would claim that governments should accept their role in causing the dilemma as well as recognize their moral duty to alter the current state of affairs. Preventionists were therefore more likely to report that the average citizen, in the future, had to become increasingly responsible (in a causal and moral manner) in order to divert disaster. In contrast, survivalists were more likely to report that no one (either now or in the future) was responsible (causally or morally) for the nuclear dilemma due to it being a result of fate or an act of inevitable history. These results demonstrated that the anti-nuclear activist and the survivalist have radically different approaches to coping with their fear of nuclear war. However, these varying means of coping can assist in increasing understanding of how mental health can be maintained in the nuclear world: we may adopt a more internalized view of altering our current dilemma or we may adopt a more fatalistic, or externalized perspective that promotes the acceptance of the status quo. Both, it can be argued, are equally effective in dealing with stress, but the preventionist viewpoint is much more likely to lead to socio-political change than the survivalist viewpoint.

Feshbach and White (1986) focused on individual differences that appeared to mediate attitudes toward nuclear related policies such as the controversial concept of a nuclear moratorium (the nuclear "freeze" concept). They indicated that both groups (pro- or anti-nuclear freeze) demonstrated equal awareness of the devasting potential of nuclear conflict. However, the researchers supported the findings of Tyler and McGraw (1983) by noting that an inflated sense of personal efficacy is extremely important in determining increased incidence of anti-nuclear activism. According to Feshbach and White, supporters of the nuclear freeze were not only more likely to be better informed on nuclear concepts, but placed more value on children and the child's right to inherit a progressive and stable world. Regardless of the position adopted on the nuclear freeze concept, the researchers noted the important role of *meaningful* information on the subsequent healthy coping of an individual. Although the stress that is often laid on the negative consequences of nuclear war is sufficient to get people's attention, it is also important to remind them that these consequences are likely to occur *unless* certain ameliorative recommendations are adopted. These recommendations must appear as specific, effective, and appropriate actions that can then be recognized as reasonable alternatives to simple complacency.

To summarize, there has been a dramatic increase in the number of professional articles written in the psychological literature on the ramifications of the threat of nuclear war. This genre of literature has grown to such an extent that it has been referred to as "nuclear depth psychology" (Blight, 1987). One aspect of the literature deals with the role psychologists can play in providing information to assist nuclear policymakers in crisis prevention, conflict resolution, and defense-related decision making. For example, significant research is required to better understand various attitudes toward other nations, explore the psychological components of deterrence theory, and deliniate the behavioral conditions under which nuclear accidents occur (Intriligator & Brito, 1988). Other psychologists have persistently pursued many of the personality-related concerns of Lifton (1982). Unfortunately, few empirical studies exist to underscore these latter concerns. Of those that do exist, the vast majority are marred by poor sampling procedures, weak item construction in surveys and questionnaires and biased or overly subjective response analyses (e.g., Raundalen & Finney, 1986). This state of affairs may exist for a number of reasons, but as Fiske (1987) points out, it is at least partially due to the lack of funding provided for such a "politically volatile" subject and the resulting need to depend on undertrained volunteers. Therefore, discussion of the detrimental effects of the nuclear threat on personality development is highly speculative in nature. Because of the complexity of this issue and its relevancy to adolescent developmental change, it will be explored in greater depth in the following chapter.

Relevancy of research

It should be clear by now that the current state of research dealing with the impact of the nuclear threat on psychological development is rather piecemeal and speculative. This is an unfortunate state of affairs because the threat of nuclear conflict could very well cripple the healthy psychological development of all members of society

In this section the author will address a number of reasons that support the need for further study of the psychological ramifications that stem from living with the nuclear threat. These include: aspects of a professional's sense of moral and social responsibility, the impact on how adults should approach children's concerns with regard to the threat, capitalizing on recent and current political climates, and the need to revise pre-nuclear concepts in a nuclear world.

Moral/social responsibility and Psychology

At the most fundamental of levels, the planned use of nuclear weapons in the "continuation of policy by other means" must be recognized as immoral. As made clear by the Pastoral letter of the Roman Catholic Bishops of the United States (May 3, 1983): "no Christian can rightfully carry out orders or policies deliberately aimed at killing non-combatants." And it is certainly the average citizen, the victim of so-called "countervalued targets," that will bear the brunt of a nuclear exchange. Due to the uncontrollable nature of the nuclear weapons planned for international conflict, many strategists believe that war, as we once knew it, is outdated. Not only does the vast explosive power and radiation effects defy the level of containment that would be required for strategic use, but "the readiness to use nuclear weapons against other human beings...is nothing less than a presumption, a blasphemy, ...an indignity of monstrous dimensions " (Kennan, 1983, p. 207).

From the specific perspective of psychologists, a clear moral/social responsibility dictates their involvement in the nuclear issue. From this viewpoint, nuclear weapons represent the considerable dilemma that exists in the interface between high technology and human experience. If the "human experience" is part of the equation, psychologists *must* be involved. The technology/human dilemma has two aspects. The first aspect deals with the possible impact of the underlying threat of nuclear weapons on the mental health and personality development of human beings. The second aspect deals with the tenuous mediation of highly destructive weapons, often projected to occur in the most stressful of wartime scenerios, by human beings with all their inherent psychological foibles and failings (Muller, 1984). No technological advancement can be considered foolproof, for, as geneticist David Suzuki noted, "no human being is not a fool at sometime in their lives." Surely, for this reason alone, psychologists have a clear responsibility to analyse the existing procedures for administering and controlling these weapons. Feshbach and White (1986) noted that it is a major challenge for behavioral scientists to be come involved in these issues because:

> ...perspectives involving the nature of attitudes and beliefs concerning nuclear weapons are clearly within our traditional competencies and interests. (p.120)

Nevertheless, an argument that questions the role of the psychologist in a "polititically volatile" subject occasionally resurfaces. Often this argument is rooted in the premise that the only "pure" psychological knowledge is that which is gained through objective procedures. This premise, in turn, relies on the hypothetical split between facts and values; that is, the assumption that a scientist's research remains unaffected by his or her personal value system. It is then argued that psychologists cannot maintain true objectivity when dealing with an emotionally charged issue like the nuclear threat. But to believe that psychological research is immune to the influence of the researcher's personal interests, or, indeed, the prevailing political climate is shamefully naive (Fischhoff, Pidgeon & Fiske, 1983; Morawski & Goldstein, 1985). As long as research can be maintained with an acceptable level of scientific rigor, psychologists should face their social responsibility, ask questions that have been swept under the political rug, and seek answers - regardless of their implications.

Adult approaches to children's fears of the nuclear threat

Concern over how the findings of nuclear-related research impact on our youth can be approached from, at the very least, three different adult perspectives: that of parent, teacher, and responsible citizen. The psychological dependency of the parent-child dyad is crucial to the effective coping of children facing the nuclear threat. The core of this dependency rests in the child's sense of relief when parent's give assurance that the threat is being monitored by caring, politically aware adults (Zeitlin, 1984). However, the role of the total family unit in building open channels of communication and trust, especially when dealing with an externally-perceived threat, is considered especially important to effective coping. In this sense the family unit is considered to represent a microcosm of the global political problem of distrust and miscommunication. Family therapists note that it is crucial to confront the tendency in families to protect each other from shared, though unspoken, fears. This trend toward mutual protectiveness is, in the long run, dysfunctional and detrimental to establishing effective coping mechanisms (Bloch, 1984; Simon, 1984).

The psychoeducational ramifications of discussing the nuclear threat in the classroom further strengthen the importance of nuclear-related research. London (1987) has expressed the concern that peace educators actually promote an uncritical acceptance of a "peace-through-cooperation" perspective that is nothing less than "the calculated mass exploitation of children for partisan political purposes" (p. xii). London continued along this vein to claim that the overt purpose of peace education is to *promote* fear as part of the anti-nuclear lobby plan. On the other side of the coin, Reardon (1988) suggested that peace education strengthens the psychological well-being of children. According to Reardon, "peace making" in the classroom increases the student's capacity to care for others, and, in so doing, become more fully human. Regardless of the position one adopts in the peace education debate, peace educators undoubtedly have a difficult role to play.

The challenging nature of this role demands the support of psychological evidence - something terribly lacking in the literature of today. In a crude sense, today's children are being used as guinea pigs; they are being "tested" on peace curricula that have never been analysed for its psychological ramifications. For this reason it is important that answers be sought for questions such as: Do children who report frequent worry over the nuclear threat identify peace curricula as a source of their anxiety? Can our knowledge of the child who reports frequent worry direct changes in current peace curricula?

This line of questioning challenges whether psychologically secure, effective citizens can evolve from a generation that has been nurtured in the continual presence of the nuclear threat. As noted earlier, Bachman et al. (1984) reported a significant correlation between nuclear-related despair and a general dislike for the political process in high school seniors. On the other hand, researchers such as Fiske, Pratto, and Pavelchuk (1983) and politicians such as Markey (1985) have indicated that the potential for grass-roots political action exists in those individuals who have a clear, balanced perspective on the nuclear threat. Unfortunately, longitudinal research designs can provide the only reliable answer to speculation over the type of citizen who will evolve in the nuclear age (Hesse, 1986). Equally unfortunate is the fact that no such psychopolitical research of this type has been initiated.

The timeliness of research studying the nuclear threat and children

With the beginning of the 1990s it becomes increasingly important for professional psychologists to judge the impact of the nuclear threat on the well being of children. Concern over the deleterious effects from living with the knowledge of possible nuclear war is clearly evident in the psychological literature. Gone are the days when a library search for the keyword "nuclear" would merely reveal benign concepts such as "the nuclear family." One need only casually peruse the psychological indexes to note the vast number of articles that have been published on the ramifications of the nuclear threat. Still, there are critics who claim that psychological concern over the threat of nuclear war is just another professional "fad." These same individuals point to the recent thaws in Soviet-American relations as indication that studying nuclear despair is passé. The critics are forgetting three major points. First, the current surge in arms control negotiations, by their nature, not only increase focus on the nuclear dilemma, but bring attention to the fact that the superpowers are *not* the only countries to possess these weapons; the lateral poliferation of nuclear armaments is a major concern of many individuals. Changes in superpower positions on the use of nuclear weapons therefore do not completely erase the possibility of their use in other parts of the world. In addition, the critics must face the fact that although the decade of the1980s is history, the *impact* of the decade is not. Since the presidential inauguration of Ronald Reagan, the strategic forces of the American military have undergone an unprecedented nuclear buildup (Barash, 1987). What, we may ask, is it like to explore one's formative years in a North American society where governmental policies shifted from Mutually Assured

Destruction to fighting "winnable" nuclear wars? Although all sensible people will hope that the world never witnesses further nuclear buildups, no amount of hoping can alter the fact that contemporary youth have lived through such an expansion. In other words, the time is ripe for psychological study of a generation that is justifiably "at risk." Finally, it can be argued that the underlying concern driving nuclear-related research is *not* political in nature. As noted by Tizard(1989):

> The issue of how individuals respond to the nuclear threat is of the greatest interest because it raises in a very concrete form the question of how the individual, the family, and the broader society influence each other (p. 9).

The need to reconsider prenuclear psychological concepts.

Wagner (1985) emphasized that prenuclear psychological concepts cannot be gratuitously applied in the nuclear world. He also indicated that positivism may not be useful when considering certain nuclearisms; alternatively, we may need new methods, steeped in speculation and generalization.

> Our ability to provide wise, expert counsel is limited. We must, therefore, initiate research programs and develop concepts for understanding the effects of the nuclear threat on the psychological processes we have previously studied in more benign contexts. (p. 534)

For example, Wagner noted the political importance of Janis's (1982) analysis of small-group decision processes, or the "Group Think" phenomenon. According to Janis, str[illegible] ([illegible]mulated) affects the effectiveness of group judgments and creates disturbing cognitive distortions in individual group members. White (1984) has been instrumental in proposing retrospective applications of Janis's concepts to numerous political situations. However, Wagner claimed that Janis's hypothesizing is based on experimental studies that have questionnable ecological validity. Can Janis's observations be reliably applied to the stress of a contemporary nuclear crisis? According to Wagner, a reevaluation of the applicability of prenuclear concepts and beliefs vis à vis the nuclear world is long overdue.

In a similar way, prenuclear conceptions of adolescent anxiety, existential awareness, value systems, and so on are being gratuitiously applied to contemporary youth. This is an extremely limited and naive way to regard a portion of our society that is obviously undergoing immense social and psychological change. Therefore, it is time the adolescent predicament be reconsidered in a nuclear world.

The Black Plague of the twentieth century

Before concluding this introductory chapter a contentious issue must be addressed. Comments in the preceding section on the importance of recasting pre-nuclear psychological concepts into the context of the nuclear world naturally lead to the question: Is there a "nuclear world" at all? That is, is there anything in the contemporary nuclear situation that allows professionals to assume that today's youth are experiencing a unique existential crisis, heretofore unknown to humanity? This issue often surfaces in the nuclear literature, and takes the following form: Is not the fear of the nuclear threat one that is simply replacing the fears held by all adolescents through all of the preceding ages? After all, children of the 1st century lived in fear of marauding Vikings and youth of the 14th century had to contend with the Black Death. How could their experience be different from the experience of contemporary youth facing the possibility of nuclear annihilation (Frank, 1986; Hesse, 1986; Schwebel, 1986)?

This issue, which is fundamentally one requiring the examination of existential relativity, is essentially unsolvable. Is it actually possible to determine whether an individual's belief that his or her tribe might become "extinct" is equivalent to his or her thought that this would be the "end of the world" (Frank, 1986)? The hermeneutical analysis required to solve this conundrum is not only beyond the scope of this thesis but will, in all likelihood, evade firm conclusive evidence.

Coles (1984, 1986) claimed we are dealing with an expression of fear that is *not* unique to today's generation. Rather, he believed that we are witnessing a manifestation of politically-based concerns that are being funneled through children who belong to the higher income classes (cf., London, 1987). On the other hand there are a number of psychologists who consider the nuclear threat a unique phenomenon. In his classic study of anxiety, May (1977) contended that we have moved from the "age of reason" to the "age of anxiety" where we have become increasingly aware of the "fear of fear." May refered to the remarks of Cousins (1945), writing just after the first atomic bombs were dropped:

> ....Overnight [the fear of irrational death] has become intensified, magnified. It has burst out of the subconscious into the conscious, filling the mind with primordial apprehensions. ...Where man can find no answer, he will find fear. (p.14)

However, even these observations imply that we are considering a level of apperehension that, in just becoming "intensified," has occurred before (that is, it is "primordial" in nature). Hesse (1986) would consider this perspective inaccurate; she reported that we are dealing with a feeling of futurelessness that is indeed new. This futurelessness is symptomatic of a paradigm shift in our thinking away from the belief in the supremacy of technology and rationality. However, Hesse pointed out that it is impossible to demonstrate the negative effects of the nuclear threat on personality without carefully constructed longitudinal studies.

Until such a study evolves, we can merely speculate over this question of "existential relativity." As a result, the argument returns to an attempt to minimize the detrimental effects of nuclear anxiety on today's children by comparing their lot to those of the mid 14th century. This argument, right from the start, is faulty. It appears to suggest that we should adopt the insensitive position typified by the statement, "If children were tough enough to handle something like this before, they should be able to handle it again." Obviously, this position negates the important question, "Should today's children *have* to 'handle' such a situation...especially one that is entirely a product of human failings and mismanagement?" In addition, this minimizing view suggests that children of the mid 1300's were *not* psychologically affected by the terror of the plague. How will we ever know? No clear evidence exists either way. What *is* known is that in 1348 and1349, the bubonic plague ravished the English countryside. Trevelyan (1944, in Schwebel, 1986) reported that in a period of 16 months almost half of the existing population died due to the "Black Death" (approximately equal to 4 million deaths). Having noted this fact, Schwebel (1986) speculated that, whereas the plague took its toll quickly, the current continual threat of nuclear war quietly erodes away at a young person's tendency to develop in a psychologically healthy manner. However, there are several other dimensions in the plague-nuclear war contrast that undermine the usefulness of comparisons.

The global nature of contemporary media has significantly altered the way children look at the world (Solantus, 1989). The electronic media is pervasive: although many children in the world wish they had more food to fill their stomachs, they *do* have a television to fill their minds. In addition, the highly graphic and realistic nature of television has allowed the nuclear threat to enter most homes (Oskamp, 1985). Although the electronic media has shrunk the vastness of the globe by increasing a sense of global communication, children still perceive the Earth to be a massive place. However this massiveness is being continually associated with massive nuclear destruction. A contemporary automobile bumper sticker proclaims: "Imagine world peace." Obviously, the popularity of this social statement relies on the existence of the opposite possibility: "Imagine world war." Due to the effectiveness of our current communications systems, children of the post-nuclear era can and do imagine total-world war (as compared to the children of the plague era).

It can be argued that these latter comments still do not address the contentious point that the "isolated" world view of children facing the plague was existentially equivalent in anxiety to the "global" world view of today's child. This tenacious point can be attacked from two psychological perspectives: one developmental in nature, the other, from our general knowledge of coping strategies. From a developmental perspective, we cannot assume that the cognitive capacities of the 14th century 13 year old were anything close to those of the 20th century 13 year old. During the middle ages most adults (let alone children) had little, if any education. Historians note that little attention was paid to the special needs of children; in fact children, if unwanted, were frequently abandoned (Watson, 1978). Therefore, even if children had the cognitive capacity to visualize the destructive nature of some nebulous event referred to as "the Black Death" (which is highly unlikely), they would have certainly dealt with it in their own way (there being little likelihood of receiving adult support). This latter point brings us to a final psychological perspective that invalidates the plague-nuclear war comparison: the concept of magical thinking (Elkind, 1988). Consider the following:

Ring around the rosie,
A pocket full of posies,
Husha! Husha!
We all fall down.

In this time-worn rhyme lies a past generation's solution to the bubonic plague. The first line refers to an anatomical description of a diagnostic symptom of the bubonic plague. The last two lines refer to the sneezing and collapse considered to precede the subsequent death of the stricken. However, the second line provides the description of how to cope with the fear: carry a pocket full of "posies" (herbs); these herbs were meant to mask the offensive odor of death but also to *avert evil spirits*. Life in the middle ages was narrowly defined within the structures of religious dogma (Aries, 1962). In addition, explanations for physical phenomena rested entirely in the belief of metaphysical elements: spirits, fairies, demons, etc. As noted by Elkind (1988) and other Piagetian scholars, contemporary pre-operational thought is dominated by such "magical thinking;" that is, finding explanations for misunderstood phenomena by speculating over parapsychic phenomena. However, it can be argued that in the mid 1300's, the omnipresence of a spiritual protector (either pagan or Christian) provided a clear avenue for psychic coping that is lacking in the world of contemporary youth. The forgoing argument is not intended to judge the effectiveness of spiritual beliefs in coping with life's stresses. It is merely presented to support the argument that the plague-nuclear war contrast is invalid. Today's child lives in a highly technological world that undermines the existence of some "spiritual protector." Due to the salient role of spiritual beliefs in the middle ages we could just as well argue that the children of that time were *more* able to cope with the threat of the plague than contemporary children can cope with the threat of nuclear war.

Concluding remarks

The purpose of this chapter was to state the general rationale of the thesis research, provide an outline of the chapters to follow, and present a brief overview of nuclear-related psychological literature. This was followed by an exploration of some of the trends in psychological theories regarding the effects of living with the nuclear threat. The chapter concluded with a statement on the relevancy of the research reported in chapters 3, 4, and 5. The second chapter focuses on a more detailed review of research findings pertaining to adolescent perceptions of the nuclear threat.

II. Young People and the Nuclear Threat:

A review of the research.

In the preceding chapter it was noted that the increase in political tensions between the two Superpowers in the late 1970s coincided with a gradual increase in literature addressing the impact of the nuclear threat on the psychological well being of individuals. With the beginning of a new decade, a growing number of psychologists began to focus their concern on the perceptions and experiences of children and adolescents toward the nuclear threat (for brief reviews, see Beardslee & Mack, 1983; Goldenring & Doctor, 1986; Riefel, 1984; Wagner, 1985). These initial inquiries fueled considerable interest in popular magazines and newspapers (e.g., Arnold, 1981; Cevoli, 1982; Cooper, 1982; Evans, 1982; Freeman, 1983, Gittelson, 1982; Verdon Roe 1983; Yudkin, 1984). This interest, in turn, spawned a number of "self-help" and/or "parental-guidance" books to assist children in coping with the nuclear threat (e.g., Goldberg, 1985; Hawkes, 1983). Being by no means immune to the sociopolitical climate, social scientists grew increasingly sensitive to the nuclear issue and subsequently produced an unprecedented assemblage of opinion papers, surveys, and research reports (Fiske, 1987; Morawski & Goldstein, 1985).

The remainder of this chapter will consist of a review of this substantial accumulation of writings. In order to manage this task, the author will adopt a general chronological approach throughout the chapter: beginning with research of the early 1980s and concluding with that of 1989. First, we will consider the descriptive results of questionnaire studies that have been conducted throughout the world. This portion of the literature review will provide the reader with a general grasp of the information that currently exists concerning children's perceptions of the nuclear threat. In addition, the review of questionnaire studies will indicate the direction in which current studies should proceed.

Following the review of these descriptive studies, the overall literature of the 1980s will be examined for evidence of an unique theoretical trend that developed throughout the decade: the "psychogenic disorder hypothesis." This supposition, grounded in a medical paradigm, predicted that exposure to a traumatic stress like the nuclear threat would lead to a pathology of the psyche. The chapter will then conclude with a discussion of the difficulties that have plagued research throughout the decade as well as an indication of the issues that remain to be addressed.

Questionnaire studies: scope, design, and general results

The qualitative nature of the things children fear today is different from children who belonged to a pre-nuclear cohort. In a study of children's fears, Jersild and Holmes (1935) indicated that the children of that time were afraid either of extremely tangible objects or events (snakes, insects, burglars, bodily harm) or supernatural events (ghosts, goblins and witches). Due to the increased television coverage of the Viet Nam conflict and the fluctuating tensions in American-Soviet relations, a clear shift toward being afraid of sociopolitical events became evident in the late 1950s: children began to mention "war," and "nuclear bombs" more frequently as salient fears (Croake & Knox, 1971; Lapouse & Monk, 1959).

The earliest survey research studying the prevalence of nuclear worries in children was reported in the United States. Researchers in other countries eventually responded to produce their own descriptive studies. To date, questionnaires concerning cognitive and affective responses to the nuclear threat have been administered to children in Belgium, Canada, Colombia, Finland, Great Britain, Norway, New Zealand, Sweden, and the U.S.S.R. The following section will consider the survey findings of the U.S., U.S.S.R., other overseas countries (Finland, Sweden and Belgium) and South America. Due to its relevancy to this thesis, the analysis of Canadian research that concludes this section will be presented in greater depth.

Questionnaire studies in the United States.

The earliest studies in the United States were completed by Escalona (1963) and Schwebel (1965) soon after the 1961 Berlin and 1962 Cuban Missile crises. In a survey of 310 children (preschoolers to adolescents) Escalona posed the question, "Think about the world as it may be 10 years from now; what are some of the ways in which it will be different from what it is today?" The researcher reports that over two thirds of the group spontaneously expressed wishes for world peace. In addition, 70% of the children made clear or indirect references to a world devastated by a nuclear war. Escalona used these results to support the contention that the nuclear threat would negatively influence healthy personality development in children. Unfortunately, this early research is best treated lightly, for Escalona's approach to the children was extremely informal and lacked proper experimental control. As she stated in her article, the data was flawed by the fact that sampling was unsystematic and the questions asked of children varied depended on which particular examiner posed them. In contrast, Schwebel (1965) distributed questionnaires to 3,000 students, mostly from junior and senior high schools, of various socioeconomic backgrounds. In the questionnaires he posed the same four questions: "Do I think there will be a nuclear war? Do I care? Why? " and "What do I think of fallout shelters?" Schwebel reported that the student's answers were bitter and despondent. The students stated that they "would pay the biggest price...[missing] the opportunity to enjoy the pleasure they had hardly even begun to taste" (Schwebel, 1982, p. 609). The results of Schwebel's survey indicated that children were not only aware of the nuclear threat but that they cared a great deal about the threat's imposition on their personal futures.

The implications of the early research by Escalona and Schwebel inspired interest in the mental health community. As a result, The American Psychiatric Association (APA) established a task force to consider the psychosocial impact of nuclear developments during the late 1970s. One survey that emerged from this task force examined the effects of the nuclear threat on the perceptions and attitudes of children. Beardslee and Mack (1982) distributed 1,143 questionnaires to grade and high school students (grades 5 to 12) in the Boston, Baltimore, and Los Angeles areas. Three samples, one in each area, were collected in 1978, 1979 and 1980. The questionnaires were structured around ten questions ranging in their directedness from "What does the word 'nuclear' bring to mind?" to "Have thermonuclear advances affected your way of thinking?" In their largely qualitative report of survey results, the researchers stated that not only were some of the children aware of the nuclear threat at a surprisingly early age (before 8 years) but the awareness had deeply penetrated their consciousness. These children spoke of the frightening pace of nuclear weapon proliferation. They also expressed despair over the vast destructive nature of nuclear war. In addition to recognizing the fundamental differences between Soviets and Americans, children expressed hope that sincere effort in improving political relations would ease international tensions.

In their rudimentary "quantitative" analysis of questionnaire results, Beardslee and Mack reported that, of the high school students surveyed in 1980, the majority believed nuclear war was "at least, possible" - although it was most likely to occur in the distant future. Slight differences were noted from one survey year to the next. For example, students surveyed in 1978 were evenly divided in their responses when asked whether nuclear developments had affected their plans for the future. However, the researchers report that by 1980 "the majority" of the respondents expressed the belief that nuclear developments had affected their daily thinking and future thoughts of marriage and children. Beardslee and Mack concluded that the adolescents in their study were experiencing strong feelings of helplessness and despair. Conclusions such as these lent considerable support to the notion that living with the nuclear threat was detrimental to healthy personality development.

The research of Beardslee and Mack (1982) inspired many other mental health professional to produce additional studies, especially those that would provide statistically analyzable data. In 1983, Doctor, Shoumaker, Powell, Creaner, and Cohen surveyed 900 12 to 19 year old students from suburban areas in California. At the beginning of the survey students were asked to spontaneously respond to the open-ended question "What three things do you worry about the most?" Thereafter, they were asked to rate a list of 20 worries according to a standard Likert-type scale of 1 "Not at all worried" to 4 "Very worried." Embedded in this list of worries was "nuclear war." After this rating task was completed, the students were asked to go back and rank the top 5 among the previously rated worries. Doctor et al. reported that seven per cent spontaneously mentioned nuclear war as one of their three greatest worries. In addition, the researchers note that nuclear war was listed as one of their top three concerns, it was "almost always" considered as "number one." By reporting this data, Doctor et al. made the first reference to a small but unique group of children who consistently report frequent worry over the nuclear threat. On the forced-choice rating task, "nuclear war" was rated as the third most worrisome event, following "death of parents" and "getting bad grades" and preceding 17 other events such as "victim of crime," "own death," "pollution," "earthquakes," and "getting cancer." When asked to rank the top five worries from the preceding list of 20, a slight shift in focus appeared to occur: although "parental death" remained in first place, "nuclear war" came second and "bad grades" slipped to third place. Although unexplained by the researchers, this shift could possibly have resulted from an unconscious tendency to answer in a more socially desirable manner.

The research of Doctor et al. (1983) provided the first data that could be analyzed statistically, albeit from a rudimentary descriptive analysis. The authors were cautious in drawing their conclusions; they basically restated the Beardslee and Mack

(1982) belief that American youth were more worried over the nuclear threat than previously thought. However, Doctor et al. also suggested that openly worrying about the threat might not be as psychologically damaging as claimed by early writers such as Escalona (1963) and Schwebel (1965). Nevertheless, there was a growing endorsement in the mental health community of the "psychogenic disorder hypothesis."

Berger, Eden and Gould (1984) administered Schwebel's (1965) four questions to 256 ninth-graders in California and Maine. They concluded that children were having difficulty forming trusting images of the modern world due to the fact that the security traditionally provided by adults was being undermined by reports of international and national violence, i.e., "a world gone mad." According to Berger et al. the rising distrust for authority figures led to increasingly unstable life-ideals and reflected in their participants' tendency toward low self esteem, greater personality problems and tendency to engage in escapist behavior.

The replicative value of research such as that of Berger et al. (1984) was questionable due to the subjective nature of their data analysis. A more methodologically sound approach to surveying the opinions of American youth was desperately needed. Between 1975 and 1982 Bachman (1983; Diamond & Bachman 1986) conducted a longitudinal survey of seven consecutive graduating high-school classes from 48 American states. His sampling methods were systematically controlled and the average sample size, per year, was 17,500 students. The general theme of Bachman's (1983) original survey did *not* deal with assessing attitudes about nuclear dangers, rather it was to focus on adolescent attitudes toward the military. Eventually the national study, funded by the U.S. government, broadened it's scope to include a review of adolescent health, life styles, and perceptions of the future. From 1975 to 1982 Bachman (1983) reported significant increases in"worry over nuclear war" for both females and males (cf., Mayton & Delamater, 1986). For example, in 1976, 7.2% of male respondents stated that they worried "often" about nuclear war while in 1982, 31.2% reported similar worries. Identical trends were noted among female respondents. Along with increase in self-reported preoccupation with the nuclear threat came an increase in pessimistic fatalism over the future: in 1976, 22% of the students agreed that humanity would perish in a nuclear war "in their lifetime," while in 1982 approximately 35% of the survey respondents expressed this belief. Thus, using more efficient survey techniques Bachman's (1983) data supported the growing belief that American adolescents were becoming increasingly aware of the nuclear threat.

It is reasonable to conclude from the American studies that a significant shift in adolescent worries occurred as a result of the cold war tensions of the 1960s and the trend toward a more aggressive foreign political stance in the early 1980s. American adolescents were becoming more worried over the chances of surviving "winnable" nuclear wars, and appeared to indicate that their worries influenced their view of the future. On the other hand, and on a day-to-day basis, American teenagers were generally unaware of their own fear, with the exception of 10% of the population that were extremely worried.

The bulk of questionnaire research concerning children's perceptions of the nuclear threat has been conducted in the United States. As this research gathered momentum, it became natural to ask questions about the perceptions and attitudes of Soviet children. It is to this research that we now turn.

Questionnaire studies in the U.S.S.R.

Research exploring Soviet children's perceptions of the nuclear threat is limited and, ironically, was conducted by American scientists. In 1983, Chivian, Mack, Waletzky, Lazaroff, Doctor and Goldenring surveyed 293 Soviet children aged 10 to 15 years and conducted interviews with an additional 50 children. All children were attending "Pioneer" summer camps near Moscow and in the Caucasus on the Black Sea. Although the researchers employed a method of random selection for choosing those to complete the the questionnaire, it is unlikely that the smaller sample selected for the interview was representative of the camp population. Interview participants were selected by members of the children's own elected governing council, and they, in turn, usually chose themselves or their friends. However, Chivian et al. (1985, p. 486) stated that "practically all children in the U.S.S.R. between the ages of 10 and 15 join the Pioneers" and so it was claimed that the sample was representative of a broad cross-section of Soviet youth.

The survey and interview questions used by Chivian and his colleagues were based on the questions used by Doctor et al. (1983). In contrast to American children's major worry of "parental death," Soviet teenager's major worry was "nuclear war" ("parental death" ranked second; cf., Doctor et al., 1983). In addition, Soviet children appeared to be much more optimistic about the future: only 12% of them thought nuclear war would erupt between the superpowers during their lifetime, whereas 39% their American counterparts thought such a conflict would occur. In addition, 93%, in contrast to 65% of the Americans surveyed, thought that war could be prevented. Although more optimistic, the Soviet "Pioneers" were also more realistic about their chances of surviving a nuclear war: only 3% considered survival possible, while 16% of American teenagers considered this a possibility. The in-depth interviews conducted by Chivian et al. tended to confirm the survey findings.

Questionnaire studies in other overseas countries: Finland, Sweden, Belgium.

As interest in the adolescent's perception of the nuclear threat grew in the U.S.A. and the U.S.S.R., researchers in countries outside of the "nuclear club" began to question whether their own adolescents shared any of the fears being reported by their superpower counterparts.

The Finnish research of Solantus, Rimpela and Taipale (1984) consisted of embedding questions on war and peace in a national postal survey on health habits, career plans and living conditions. Approximately 1700 respondents 12 to 18 years of age responded to the survey. Children were asked to not only list their three greatest worries about the future, but they were also asked to list their three greatest hopes for the future (cf., Doctor et al., 1983). According to Solantus et al. (1984, p. 784) the fear of war "outruled all other fears." Hopes were more widely distributed among work, employment, school studies, own health, and peace. In a cross-sectional analysis of the data, the researchers noted developmental trends in the incidence of reported fear of war and hope for peace. Younger children reported more fear of war (and expressed more hope for peace) than did older children. Another important aspect of this research was the level of self-reported preoccupation with the threat of war. While 27% thought about the issue weekly, 5% said they thought of it daily. Elsewhere in the survey, 7% of the teenagers claimed they had felt "strong fear and anxiety" over the possibility of nuclear war more than three times in the last month. Solantus and her colleagues also reported that females were more likely to report that they were worried over the nuclear threat than males.

With tne assistance of the Swedish Institute of Opinion Polls, Holmberg and Bergstrom (1985) conducted a national survey of 917 Swedish adolescents, aged 13 to 15 years. Their research results show strong agreement with those of Solantus et al. (1984): of fourteen worries tested, "nuclear war" received the highest rating; "death of parent" was their second greatest worry. Also in agreement with the Finnish study was Holmberg and Bergstrom's finding that females were more concerned about nuclear war than males. In addition, one quarter of the Swedish adolescents believed that nuclear war would probably occur in their lifetime and two thirds of the sample did not believe that civilization would survive a nuclear war. A much smaller number of Swedish teenagers (45%), when compared to Soviet (93%) or American (65%), thought that nuclear war could be prevented. These latter results led to speculation that children in non-nuclear countries lived in the shadow of the nuclear superpowers and were more susceptible to feelings of helplessness and hopelessness (e.g., Goldenring & Doctor, 1986).

An interesting replication of the survey technique developed by Doctor et al. (1983) is reported to have been used with French-speaking teenagers in Brussels, Belgium in 1984 (see Goldenring & Doctor, 1986). Once again, females were found to be more concerned about the nuclear threat than males and older teenagers expressed less concern than younger teenagers. However, the Belgium research emphasized the importance of proper word usage and the subsequent accurate translation of survey questions. Instead of using the French word "worry," the researchers asked which issues the teenagers "thought about" and elsewhere in the survey asked them about their "fears." When the participants rated the importance of issues according to how they "thought about," or "ruminated over" them a pattern emerged that was very similar to that of spontaneous responses made by American children, "nuclear war" being ranked about fifth. On the other hand, when the European children were asked about what they *feared,* "nuclear war" shifted to third place, following "bad grades" and "death of parents." Not only is the issue of proper word selection emphasized in reviewing results such as these, but so is the issue of clearly distinguishing between constructs such as "worry," "concern," and "fear." These issues will be addressed in a later discussion.

A Questionnaire study in Columbia, South America

Some writers have claimed that adolescent concern over the nuclear threat is primarily one of the middle to upper, or "elite" classes (e.g., Coles, 1984, 1986a, 1986b). Although recent North American research has questioned the validity of such claims, it is interesting to note that a questionnaire study conducted in a "Third World" country such as Columbia further undermines the class-distinction claim (Ardila, 1986). Ardila distributed questionnaires to 400 children (7 to 8 years old) and 400 adolescents (17-18 years old). Upper and lower classes were represented in both groups. Any representation of the middle classes was rejected for, according to Ardila, " 'middle class' is a very ambiguous concept in developing countries" (p. 163). Generally, Ardila's results indicated that Columbian children were relatively well informed of nuclear developments between the two superpowers and that their anxiety levels exceeded expectations. Class distinctions in the data were evident, but not in the direction predicted by writers such as Coles: not only did lower class children think about nuclear war more often than those in the higher class, the lower class children also thought nuclear war was more likely to occur in their lifetime. In addition, both lower class children and youth indicated more signs of powerlessness: they were both less likely to agree that nuclear war could be prevented.

As noted by Ardila (p. 168), "Columbia is a country with very complicated socioeconomic conditions," and so some interesting results became evident when respondents were asked to decide which issue was more important, the nuclear threat or the Columbian economic crisis. A clear pattern of age/class interaction appeared in the data. Whereas both higher class children and youth considered the two issues to be of equal importance, lower class children clearly considered economic problems to be greater in importance. This latter tendency in lower class children to focus on economically-based survival needs seemed to disappear in their adolescent counterparts: low class teenagers appeared to see both issues as equally important. This trend toward equivalency may have been a function of increased abstractual thinking and less egocentrism in the adolescent group. Nevertheless, Ardila concluded that Columbian youth were "psychologically" affected by the possibility of nuclear war and that such an influence was felt "very deeply" in their lives.

The preceding research demonstrates the international diversity of professional concern over children's perceptions of the nuclear threat. The awareness and concern of children in the U.S.S.R. and the U.S.A. is rather as one might expect, but the level of concern shown by children in other countries is somewhat surprising. It could be, however, that children in Finland and Sweden may consider themselves to be in the "nuclear bowling alley" between the major superpowers. Canada is geographically in a similar strategic position and thus, professional concern over Canadian children's perceptions of the threat began to gain momentum in the mid 1980s.

Questionnaire studies in Canada

Harvey, Howell and Colthorpe (1985) surveyed 133 children between the ages of 6 and 11 on lower Vancouver Island in British Columbia. The general purpose of the research was to gain an understanding of the children's awareness of the nuclear threat and assess the availability of adult support groups for children in distress. The children were all of middle class backgrounds and were evenly distributed across genders. In agreement with other international data, the majority of these Canadian children (79%) felt that there was, at least, a "moderate" chance of nuclear war in their lifetime, and reported feeling fear over such a possibility. When asked whether the possibility of a nuclear conflict influenced their plans for the future, 33% claimed that it did so at least "moderately" (12% claimed it did "a great deal"). From an additional series of questions Harvey et al. noted that members of their sample lacked strong support networks. The researchers concluded that adults must adopt the role of "socializing agents" to increase the effectiveness of communication efforts between youth and adults as well as serving as "anchor points for [adolescent] concerns" (p. 59).

The research findings of Harvey et al. (1985) were helpful in drawing attention to the nuclear perceptions of Canadian adolescents. However, it was becoming increasingly evident that the time had come to move beyond descriptive summaries of the perceptions of our young people to comparative analyses:

> "More surveys...should focus not only on whether youngsters are worried or afraid but how concerned they are in comparison to other worries. Questions about the future, unrelated to the nuclear threat, should also be presented" (Beardslee & Mack, 1983, p. 86).

In order to acquire a more comprehensive understanding of young Canadian's nuclear-related perceptions, a team of researchers in Toronto developed an extensive survey that assessed the prevalence of adolescent concern about the future in relation to three specific domains, namely:

1. assuming the responsibility of job/career plans,
2. facing the unemployment situation,
3. facing the nuclear arms race.

In addition to this assessment of concerns, the researchers were interested in determining Canadian student's perceptions of how adults were or were not responding toward the concerns (Goldberg, Lacombe, Levinson, Parker, Ross, & Sommers,1985; Sommers, Goldberg, Levinson, Ross, & LaCombe, 1985).

In the spring of 1984, Sommers et al. (1985) surveyed 1011 students in Metropolitan Toronto. The questionnaire began by asking respondents to spontaneously list their three greatest worries and hopes relative to the future (cf. Solantus et al., 1984). A great deal of the Sommers et al. research findings agreed with those of Doctor et al. (1983) and Solantus et al. (1984). In addition, Sommers et al. noted that spontaneous worries over unemployment appeared as frequently as worries over the nuclear threat, thus suggesting that students were still maintaining a clear grasp of the major political issues of the time. Some developmental trends were also noted in the data. For example, with increasing age, the frequency of reporting nuclear worries declined and unemployment worries increased. On the other hand, one significant and unexpected trend appeared in the data: students who reported daily fear over the nuclear threat reported *less* helplessness vis à vis the threat than the others in the sample. The possibility of a negative correlation between "nuclear anxiety" and helplessness was completely counter to the dominant belief that fear over the nuclear threat would lead to a greater sense of despair and helplessness. It was no doubt partly due to the surprising nature of this latter finding that replicative studies in Canada were soon to follow.

Using an identical questionnaire as that developed by Sommers et al., Goldberg and her colleagues (1985) expanded the sampling of Metro Toronto to include 2,137 students (grades 7 to 12). Results again supported the previous findings that "war" was the most frequently mentioned spontaneous worry of this age group. The researchers noted that although males and females were equally likely to mention "war" as one of their worries, females were more likely to report fear over the threat. This difference in response styles again underlined the importance of maintaining clarity in question construction as well as the need to draw distinctions between constructs such as "fear," "anxiety," "despair," "concern," and "preoccupation." These issues will be discussed in more detail later in this thesis.

The greatest contribution of the Goldberg et al. (1985) research rested in their decision to approach their data in a more comprehensive, statistical manner. The researchers clearly wanted to analyze the assumption that the expression of fear over the nuclear threat would negatively affect mental health and development. This focus led them to compare the responses of those who claimed to worry a great deal over the threat with those who stated they worried little, if at all. In addition, Goldberg et al. explored the data for any relationships that might exist between level of nuclear worry and the respondent's sense of personal control over the nuclear threat. In agreement with results reported by Doctor et al. (1983) and Solantus et al. (1984), Goldberg and her colleagues found a small (8%) group of students who reported "feelings of fear and anxiety" on an "almost daily basis." This group did not differ from others in the sample in whether they were male or female, Canadian born or not, or whether their parents had taken part in anti-nuclear activities. The data was inconsistent in indicating whether or not the daily fear group had taken anti-nuclear actions themselves. However, the daily fear group differed from the others in the sample in a number of ways: they were younger and, in contrast to the belief that the anti-nuclear stance was the sole domain of the "elite" classes (Coles, 1984), they were more likely to come from lower socioeconomic families. Beyond these findings, the data presented an inconsistent picture of the "daily worriers." On the one hand, there was evidence to indicate that these students represented that portion of the population that was prone to worry about *everything:* members of the daily fear group were also more fearful when it came to addressing unemployment and job/career issues. On the other hand, members of the daily fear group were more likely to state they felt a sense of personal influence over controlling the threat of nuclear war (cf., Sommers et al. 1984). Among those who said they were not fearful and anxious at all, 78% felt they had no personal influence over the threat, while in the daily fear group, only 42% chose this response. The researchers displayed appropriate restraint in drawing conclusions from these findings, especially due to the fact that the measure of "personal influence" consisted of a single Likert-type four point scale with the doubtfully valid labels "No (control)," "Some," "A lot," and "Total Control." Still, Goldberg et al. examined the possibility that students capable of expressing their fear were coping more positively with the nuclear threat and were thus showing greater personal and social efficacy than those who claimed to experience no fear whatsoever (cf., Macy, 1982). The validity of this interpretation was carefully examined in a subsequent replicative survey of 600 Edmonton students (Lewis, 1986b). Simply put, a single four-point Likert scale cannot provide the depth of information needed to support significant conclusions. For example, to conclude that students who reported no fear over the nuclear threat (and so felt "no control" over the issue) were experiencing helplessness and were thus "at risk" is merely conjecture; those reporting "no control" over the nuclear threat could just as well be more fatalistic or, in fact, *realistic* than their "total control" peers (Lewis, 1986b).

Therefore, the initial research findings of Sommers et al. and Goldberg et al. implied that children who expressed fear over the nuclear threat might not be at risk for mental health problems. Unfortunately, the measured self-restraint shown by Goldberg et al. in the interpretation of their data was not adopted by other researchers (e.g., Hesse, 1986) and the "psychogenic disorder hypothesis" of the dominant medical community continued to be highly resistant to alternative hypotheses such as those proposed by the Canadian researchers. The implications emanating from the misinterpretations of Goldberg et al.'s tentative speculations will be discussed in a following section of this chapter.

By the mid 1980s a groundswell of concern over nuclear weapons and their use had begun to take a hold on the political consciousness of Canadian citizens. This concern was undoubtedly fired by the federal government's decision to permit the testing of American "Cruise" missiles in northern Alberta. As part of this shift in social consciousness, the professional mental health community continued to express concern over how the increased saliency of the nuclear weapons issue might impact upon the perceptions and feelings of Canadian adolescents.

Fueled by this undercurrent of popular concern over nuclear weapons, the questionnaire developed by Sommers, Goldberg and colleagues was updated and administered to Canadian students as "The Canadian Children's Concerns About the Future" survey (CCCAF). The survey was administered to 7,993 adolescents and young adults, with ages ranging from 11 to 21 years (average age was 14.95 years). Twenty communities were sampled from a wide range of rural to urban and remote to densely populated areas. It took almost three years to compile all the data into a statistically analyzable format in one central location. The final sample was found to be representative of English speaking adolescents based on gender, socioeconomic status (SES), parental unemployment rates, ethnic origin, and single parent families (Lewis, Goldberg & Parker, 1989).

One major goal of the CCCAF study was to confirm if trends noted in the Toronto studies would appear in a larger national study. Lewis et al. (1989) reported that this indeed was the case. For example, in the original Toronto area surveys an average of 53% of the students mentioned nuclear war as one of their three main worries about the future. In the national survey 52% of students did so. Further agreement between the Toronto and national data sets demonstrated few regional differences in concerns about the threat of nuclear war. Interestingly, the national sample revealed the same small (7%) but significant group of children who reported feeling fear or anxiety over the nuclear threat on an "almost daily" basis as was described by Doctor et al. (1983), Solantus et al. (1984), and Goldberg et al. (1985). However, in reporting the survey results, Lewis et al. chose to ignore the thorny issue of possible correlations between expressed nuclear anxiety and sense of "personal influence" over the threat and, instead, examined possible gender differences in concern over the threat, effects of the threat on future planning, adolescent concern over the threat as a function of geographic location and SES, and the role of parental activism on adolescent nuclear anxiety. The results of their analyses will be reported in detail.

Solantus et al. (1984) suggested that female adolescents were more likely to recognize their anxiety and express their fear of nuclear war than males. Unfortunately there was a tendency in the professional literature to interpret this finding to mean that females were more susceptible to emotional trauma as a result of the threat (e.g., Frank, 1986; Schacter, 1986). In a reexamination of their data, Solantus and Rimpela (1986) studied the differences and interactions between "thinking" and "anxiety" over the nuclear issue. In their group of Finnish teenagers they found that boys thought of the threat more often than girls, but boys would express their anxiety less often. It was becoming increasingly clear that distinctions needed to be made between the act of cognitive appraisal ("thinking," or perhaps even "being concerned") and a more affective experience ("worry," "fear," or a more generalized state of "anxiety"). Zweigenhaft (1985b), while studying a wide age range of individuals (15 to 74 years of age), supported the need for making distinctions between certain constructs appearing in the nuclear-related literature. Zweigenhaft had found that males showed less worry than females and were more unsure about supporting antinuclear political efforts such as the "nuclear freeze" concept. However, the researcher also found that males had greater technical knowledge of nuclear weapons than females, suggesting that they were confronting the issue from a more cognitive, analytical perspective whereas females were operating from a more affective, intuitive perspective. One task undertaken by Lewis et al. (1989) was to explore this issue of gender differences in nuclear perceptions. First, they compared the percent of males and females who reported nuclear war as one of their three worries. No differences across genders were observed. But, could this undisputably represent an "anxiety" response or a more cognitive, analytical response that was influenced by answering in socially desirable ways? Therefore, in order to determine the teenagers' level of cognitive-based concern over the nuclear threat, the scaled responses to six questions addressing how frequently they discussed or thought about the nuclear issue (at home, in school, or with friends) were summed. The researchers referred to this composite score as a "preoccupation" score. An one way analysis of variance indicated that there were no gender differences when it came to being concerned with the nuclear threat. However, when asked to report how often the threat of nuclear war gave then "feelings of fear and anxiety," females reported more frequent anxiety than males. Therefore it appeared that general preoccupation with the threat is a global phenomena, although females are more open in expressing their anxiety.

From the earliest research of Escalona (1963), there was a growing concern that the nuclear threat might affect adolescent perceptions of the future. Unfortunately, research questions that attempted to explore this issue were often posed in ambiguous ways. For example, Stewart (1988) reported that 17% of his adolescent sample agreed that "the nuclear threat has affected their plans for the future" (p. 456), but due to the wording of the question, was unable to clarify *how* the threat had acted in such a manner. Using the CCCAF survey, Lewis et al. (1989) asked students to rate the following statement: "Thinking about the threat of nuclear war makes me wonder if I really want to get married and have children someday." Approximately 25% of the respondent felt the nuclear threat had significantly influenced their future plans for a family. Ten percent of this group claimed it influenced their views "a lot." In addition, 22% of the students considered the nuclear threat to be influential in their desire to "live for today and forget about the future." Again, 10% felt the threat influenced this desire "a lot." Considered together, the results from these two questions imply that a quarter of the CCCAF adolescents felt drawn toward living "for the moment" as they faced an unsure future. The reliable presence of the extreme group or respondents (those answering that it affected their lives " a lot" in both manners) evokes the question, "are these students representing the *same* 10%?" and "How many of this 10% group belong to the 7% "daily fear" group?" A goal of this thesis is to address questions such as these.

Additional results of the CCCAF study emphasized the global nature of adolescent concern over the threat of nuclear war. Using Scheffe's Multiple Comparison Test to analyze the nuclear threat preoccupation scores described above, Lewis et al. demonstrated that students from all five sampled areas of Canada were no different in their concern over the threat. The researcher's used an identical statistical method to show that fear of the nuclear threat was not the sole domain of the "elite classes." Indeed, students from middle to poverty-level classes were most likely to express fear over the nuclear threat (cf., Coles, 1984,1986b).

Writers such as Coles (1986a), often merely stating their opinions or basing their observations on non-representative interviews, have openly criticized the literature dealing with children's perceptions of the nuclear threat. Not only did Coles claim that it was an issue reserved for those in the upper socioeconomic class but that adolescent concern over the threat was likely to be influenced by parental anti-nuclear activism. The CCCAF data did not indicate that worry over nuclear war was confined to those students with peace activist parents. For example, although 52% of the respondents listed nuclear war as one of their three main worries, only 8% reported to have parents who had taken action against nuclear weapons. Still, report of parental anti-nuclear action was associated with a higher frequency of worry (affect) and a higher level of concern (cognition) about nuclear war. On the other hand parental "peace activism" was also associated with adolescent fear/concern over the distinctly different but nevertheless sociopolitical issue of the unemployment crisis. This latter finding raised the possible interpretation that *any* form of parent social action increases the general level of social concern among students and this concern, in turn, often manifests itself in the "issue of the day:" the nuclear threat. The role parents play as socializing agents, especially for those who report frequent anxiety over the nuclear threat will be analyzed in this thesis.

The preceding section has reviewed the major questionnaire studies of the U.S.A., U.S.S.R., Finland, Sweden, Belgium, Colombia, and Canada. In general terms, the research suggests that there has been a significant change in the qualitative nature of fear experienced by children over the last half century. These fear objects have shifted from the concrete and/or supernatural (e.g., snakes and/or goblins) to the more abstract yet realistic threats such as nuclear war. More specifically, the reviewed studies demonstrated that children and adolescents throughout the 1980s became more cognitively concerned and more emotionally affected by the threat of nuclear war regardless of socioeconomic status, geographic location, or country of birth. This level of concern and worry was found to be comparable to that experienced over more age-appropriate issues such as planning a career, or seeking employment in one's chosen career. However, the fear instilled by the threat of nuclear war was considered to be qualitatively different; a dark, unprecedented, overwhelming fear. Not only did the youth of the 1980s clearly understand that the superpowers have different and fundamentally antagonistic political philosophies, they also seemed to express little confidence in the effectiveness of politicians and political systems. Finally, research results suggested that as well as being afraid of the possibility of nuclear war, the youth of the 1980s viewed the future with cynicism and doubt. The combination of these findings led to considerable concern over the mental health of these children and adolescents.

The epidemiology of the "psychogenic disorder hypothesis"

A constant undercurrent in the research of the 1980s rested in the professional concern that anxiety over the nuclear threat promoted maladjustment and disturbed personality development. As noted by Tizard (1989), an hypothesis such as this is firmly entrenched in a medically-based psychiatric paradigm that proposes that exposure to a traumatic agent (the nuclear threat) is liable to lead to a disorder (disturbances in mental health). A brief analysis of the development of this "psychogenic disorder hypothesis" throughout the 1980s is in order.

The initial research that proposed the psychogenic nature of the nuclear threat was that reported by Escalona (1963) and Schwebel (1965), reviewed above. Writing almost twenty years after her initial research, Escalona (1982) focused on the detrimental role the nuclear threat could play on personality development, primarily from an Eriksonian (1950;1963) perspective. Escalona claimed that central theme of Erikson's "Psychoanalytic Ego Psychology" (the search for an Ego Identity) would be of special significance to adolescents attempting to conceive of a future shadowed by the nuclear threat. According to Erikson, the stability of the Ego is not only influenced by one's parents, but by the larger social environment as well. Therefore, Escalona spent considerable time describing how the negative psychosocial effects of living with the nuclear threat had been "well documented (Kardiner, 1978, Lerner, 1965)." Escalona neglected to indicate, however, that much of this evidence was theoretical conjecture.

Schwebel's early research (1965) was much more direct in its attempt to assess the psychological impact of overdependence on ego defense mechanisms such as denial and repression. However, his survey still offered no valid measure of the degree to which mental anguish had been converted to pathology. Following his personal observations of adolescent bitterness over living in a nuclear world, Schwebel concluded that the nuclear threat was a major contributing factor to the anxiety and general insecurity being experienced by adolescents. As a result of this insecurity, Schwebel proposed that youth were left in the difficult position of either facing the "erosive effects" of their fear or avoiding the facts and living in a absurd world of continual denial.

Coinciding with the early findings of Escalona and Schwebel were those being reported by Lifton (1965; 1979). Based on interviews with 55 survivors of the Hiroshima bombing, Lifton described some of the immediate and long term consequences of this event. In many cases survivors reported being aware of others dying about them, but felt utterly desensitized to their own plight and the plight of others. Lifton labeled this phenomenon "psychic numbing" and later expanded his concept to include all those who were living with the threat of nuclear war(Lifton, 1980, 1982a, 1982b). Given the precarious nature of the nuclear situation Lifton felt that there was a widespread tendency to resort to psychological maneuvers which produced psychic numbing or diminished feelings (Lifton & Falk, 1982). Furthermore, psychic numbing to the nuclear threat would lead to the unconscious need to escape hopelessness through altered states of consciousness, drugs, and apocalyptic religious movements (Lifton, 1982b).

All the early research that formed the foundation of the psychogenic disorder hypothesis evolved from the political tensions that existed in the United States in the mid 1960's (e.g., Escalona, 1963; Lifton, 1965; Schwebel, 1965). This period was followed by a decade of political detente. With the beginning of the Reagan administration in the 1980s, and no doubt as a function of the fear created by his "evil empire" rhetoric, a sudden increase in concern over nuclear weapons and their use became evident in the

United States. For example, a special issue of *The American Journal of Orthopsychiatry* (Gordon, 1982) featured a forum on the nuclear threat. The principle views expressed in this publication where basically reiterations of opinions and research that had originally been published in the 1960s (e.g., Escalona, 1982; Schwebel, 1982; Lifton, 1982a).

A growing level of concern over the psychological impact of the nuclear threat was clearly being expressed by a number of mental health professionals. This growing concern coincided with the publication of landmark research exploring the psychosocial impact of nuclear developments and endorsed by the American Psychiatric Association: the research of Beardslee and Mack (1982). This research was soon to be cited repeatedly by writers who uncritically accepted the validity of the psychogenic disorder hypothesis. For example, Kanet (1983) reported that "imminent annihilation" was having adverse effects on the emotional lives of young children. The writer claimed that "recent research" (implying that of Escalona, 1982; and Beardslee & Mack, 1982) demonstrated that worry over the nuclear threat "weakens the establishment of personal identity at a decisive time of life (p. 28)." Kanet continued to state that youth lacked faith in the future, perceived life as insecure and unstable, was adopting a "get-it-now" attitude, and implied that living with the stress of the nuclear threat led to "escape to cults, fundamental ideas and religious modes that claim young minds in need of reassurance and direction (p. 29; see also, Goodman, Mack, Beardslee & Snow, 1983; Stern 1982)." The opinions expressed by Kanet (1983) and others had no substantial empirical support. Nevertheless, the research efforts of individuals like Beardslee and Mack (1982) were instrumental in bringing the issue of children's awareness of the nuclear threat to the attention of the popular press (e.g., Gittelson, 1982; Verdon-Roe, 1983; Yudkin, 1984).

The tide of concern would continue to swell into the mid 1980s. Aarons (1984, p. 225) proposed that "the prospect of the inevitability of a nuclear war threatening survival is demoralizing. The superego is compromised and sublimation impeded, resulting in an increase of primitive manifestations of aggression." Borgenicht (1985) uncritically adopted

Escalona's (1982) interpretation of Erikson's (1950) dilemmas of the Ego Identity and claimed that the healthy personality development of children was at risk. Schachter (1986) reported that the threat of "nuclear catastrophe" was a pervasive preoccupation among youth. In their discussion of the nuclear threat, Duncan, Kraus & Parks (1986) implied that children throughout the world were experiencing feelings of powerlessness, hopelessness, and resignation.

A review of the literature suggests that a reliable, scientific analysis of the psychogenic disorder hypothesis was succumbing to the sensationalism of "alarmists." By the mid 1980s a number of distinct behaviors were being associated with the anxiety instilled by the nuclear threat (Bloch, 1984; Rogers, 1982; Schwebel, 1982, Zeitlin, 1984). Some of the more common attitudes/behaviors were as follows:

1. a loss of trust or sense of dread about the future;
2. a sense of "aloneness;"
3. negative cognitive set;
4. nightmares, insomnia;
5. stomach aches, nausea;
6. passivity, depressed affect;
7. lowered self-esteem;
8. loss of energy, great fatigue, poor concentration;
9. nervousness, tension, pressure; and
10. an increase in hedonistic drive: day-to-day seeking of pleasure.

The depth of concern over the psychogenic disorder hypothesis was again demonstrated by the publication of an entire issue of a professional journal devoted to the nuclear threat: *The International Journal of Mental Health (IJMH)* (Schwebel, 1986a). However, the articles published in this journal appeared to reflect a more cautious tone with regard to the negative impact of the nuclear threat on youth. Frank (1986), an extremely outspoken critic of the arms race, continued to claim that the "psychological aspects" of the nuclear threat would result in youth seeking comfort in extremes such as hedonistic or fundamentalistic pursuits. However, Frank (1986) appeared to modify some of his earlier, adamant endorsements of the psychogenic disorder hypothesis (cf., Frank, 1960, 1967). In his *IJMH* article, Frank stated that worry over the threat might not *necessarily* lead to psychopathology; rather, it may only be a problem for those individuals predisposed to anxiety disorders. Similarly, as guest editor of the *IJMH*, Schwebel (1986) indicated that significant gaps in the research were contributing to the uncertainty of assumed relationships between the nuclear threat and disordered behavior. Nevertheless, an examination of Schwebel's discussion reveals that his call for research was based on the assumption that the psychogenic disorder hypothesis was true and simply required validation.

Although a general sobering of perspectives toward the negative effects of the nuclear threat appeared to be developing toward the end of the 1980s, the psychogenic disorder hypothesis, firmly entrenched in the medical paradigm, remained active in the minds of many mental health professionals. Recent publications have adopted a much more balanced and cautious analysis of the adolescent predicament vis à vis the nuclear threat and have often included specific criticisms of the psychogenic disorder hypothesis. For example, Tizard (1989b) stressed that most research to date has ignored the importance of the greater social context in which adolescent perceptions of the nuclear threat are formed. More specifically, Van Hoorn, Le Veck and French (1989) emphasized the role of the "campus culture," the media, and the general political climate in the increasing level of concern expressed over the nuclear threat. By discussing the importance of the greater social context, Tizard (1989) implied that the increased popularity of the psychogenic disorder hypothesis could have been a function of the sociopolitical climate. Indeed, with the sudden easing in cold war tensions in the latter part of the 1980s, there has been a noticeable decrease in "alarmist" nuclear-related literature.

Tizard (1984,1989) not only openly attacked the validity of the psychogenic disorder hypothesis but also claimed that no clear evidence exists to support the unconscious act of "psychic numbing" (cf., Lifton, 1979). Tizard noted that people *consciously* suppress thoughts of the nuclear threat - which is more of an adaptive coping mechanism rather than a pathogenic one. Finally, Tizard suggested that it is important to discover why children are concerned about the nuclear threat in the first place. For example, could it be due to a predisposition to anxiety or due to "non-neurotic" psychosocial factors such as genuine concern for the environment?

The psychogenic disorder hypothesis is highly tenacious and continues to be the dominant nuclear-related concern of mental health professionals with regards to today's youth. However, some psychologists have suggested that children and adolescents who express their fear of the nuclear threat are better prepared to cope with living in today's world (e.g., Goldberg et al., 1985; Goldenring & Doctor, 1986). This latter perspective is similar to that held by psychotherapists who have counselled individuals experiencing nuclear-related anxiety. One such counsellor, Macy (1982), claimed that fear of nuclear war, and thus showing concern for the world, is a positive sign of suffering that indicates a "measure of one's humanity." Through expressing one's fears, Macy claims that one experiences a sense of interconnectedness with the world. This sense of interrelatedness supposedly leads to an ongoing, dynamic exchange of energy with other individuals. One becomes motivated to cause change; one becomes "empowered."

Unfortunately, some researchers have endorsed the "empowerment hypothesis" without being able to provide strong empirical data. A typical example is found in Hesse's (1986) review of nuclear-related research. Hesse cites Tizard (1984) as stating that children who expressed their anxiety over the nuclear threat demonstrated higher levels of self esteem and optimism. However, Tizard (1984), in turn, has cited a mere *letter* written by Goldenring and Doctor (1984) to the British medical journal *The Lancet*. The research discussed in their letter and subsequently reported by Goldenring and Doctor in 1986 incorporated no valid or reliable measure of self esteem. Similarly, researchers tend to exaggerate the conclusions drawn by Goldberg et al. (1985) in which they claimed that members of the "daily fear" group indicated a "stronger sense of personal and social efficacy (p. 511)." The conclusions drawn by Goldberg and her colleagues should be treated cautiously due to the rudimentary nature of their analysis and the impoverished quality of their survey items. Although the chi-square values reported by Goldberg et al. appear to be significant, they report no statistics indicating the strength of the non-parametric relationships. In addition, two or three simple four-point Likert-type scales, as used by Goldberg et al., cannot provide the depth of information required to support significant conclusions.

Research dealing with adolescent perceptions of the nuclear threat appears to be locked between two extremes: that which supports the psychogenic disorder hypothesis and that which supports the empowerment hypothesis. Any attempt to draw conclusions from the research that does exist has been severely limited by the questionable quality of the research itself. The following section will address this latter issue.

Limitations in nuclear-related research

As noted by Fiske (1987), it is truly amazing that the abundance of nuclear-related research that has grown throughout the 1980s has been managed at all. This is due to the fact that, perhaps because of the "political nature" of the subject matter, a great number of studies have had to rely on the support of volunteers. In addition, funding agencies willing to support research have been rare, resulting on supportive funds being donated by anti-nuclear activist groups (e.g., The International Physicians for the Prevention of Nuclear War). These limitations obviously not only bring to question such things as the controlled administration and interpretation of surveys (due to the reliance on poorly trained volunteers), but also leave doubt as to whether research has been free of unbiased interpretations.

One major difficulty in a substantial number of descriptive surveys has rested in the acquisition of appropriate, representative samples of adolescents. For example, some researchers have obtained their samples from schools with obvious religious affiliations, and then report their findings as if they could be generalizable to the population as a whole (e.g., Blackwell & Gessner, 1983, Stewart, 1988). Others have restricted their selection of participants from limited geographical areas or upper class neighborhoods (e.g., Beardslee & Mack, 1982; Doctor et al., 1983). Finally, other researcher's have had to rely on College "volunteer" pools (usually filled by students obtaining partial credit for Introductory Psychology courses), and in so doing limit the generalization of their findings to the students of a specific college campus (Hamilton, Chavez, & Keilin, 1986; Hamilton, Knox, & Keilin, 1986a).

An additional severe limitation to past research has appeared in the form of researcher bias. One of the clearest cases of this problem surfaced in the research reported by Beardslee and Mack (1982). Goldberg et al. (1985) have expressed concern over whether the questions posed by the Beardslee and Mack team stimulated more anxiety than was actually experienced by the respondent on a day-to-day basis. The demand characteristics of all research lead to the possibility of participants answering in a socially desirable manner. Controlling for this possibility is especially important when it is recognized that the nuclear issue is an extremely volatile subject that is greatly influenced by the media and social/political events (Tizard, 1989; Van Hoorn et al., 1989). Submitting research findings to more quantitative analyses and avoiding the urge to rely entirely on subjective analyses may increase the accuracy of results.

Finally, it is unfortunate that a great deal of the research dealing with the nuclear threat is limited by the simple fact that the wrong research questions were asked in the first place. For example, by the mid 1980s there existed a surplus of studies listing the number of children afraid of the nuclear threat but very few bothering to ask such questions as, "what is the psychological nature of the child who is most afraid?" and "what is the exact nature of the threat, *in their words,* that is most frightening?" It is unknown whether the neglect shown in phrasing the proper research questions was due to ignorance or accident. However, it has become increasingly clear where the research must proceed.

Concluding remarks:
Direction of thesis research

In a broad context, this thesis is directed at fulfilling some of the requirements set by Fiske (1987, p. 215) in her discussion of the psychologist's role in the nuclear issue. First, Fiske noted that the issue should be studied "not in isolation but rather along with people's beliefs, feelings and actions regarding other serious issues." To this effect the following research considers the nuclear fears of adolescents with respect to more traditionally accepted fears such as unemployment and career planning as well as with respect to more contemporary, sensational fears (e.g., AIDS, terrorism, violent crime). Second, Fiske noted that "we need more national surveys coupled with subsamples interviewed in depth." This criterion is fulfilled by the following research. Finally, Fiske discussed the need to acquire data that reveals "the sources of people's reactions;...[there exists] only the sparsest of data on the influences of family and friends and on the impact of the media." The following research provides an in-depth analysis of the psychosocial factors that influence the perceptions of children who report frequent fear over the nuclear threat.

In addition to meeting the general goals outlined above by Fiske (1987), the following research attempts to reconcile the potential antagonism that exists between two radically different views of today's adolescents. Some individuals, including psychiatrists, psychologists, sociologists, social workers, teachers and family therapists propose that anxiety related to the threat of nuclear war has detrimental effects on the psychological well being of the contemporary adolescent. This premise exists entirely without strong scientific support. Most writers base this assumption on the general conclusions of descriptive studies and/or biased case studies. Amazingly little substantiated data exists about the child who expresses "excessive" worry over the nuclear threat. Therefore, a major goal of the following research is to gain a more accurate psychosocial description of the child who is frightened by the nuclear threat.

On the other hand, researchers and writers who endorse the empowerment hypothesis claim that young people who acknowledge their fear of the nuclear threat are more likely to demonstrate personal, social and political efficacy. We are therefore left with the crucial question, "Is the 8% of the population that expresses frequent fear of the nuclear threat merely the 8% of the population that is anxious about *everything*, or does it represent the socially-aware 'leaders of tomorrow'?"

The preceding review of the literature indicates a severe gap in present understanding of the adolescent who expresses anxiety over living in the nuclear age. Put bluntly, we know little about this individual, especially in comparison to the "average" child on such psychometrically assessable variables as self-esteem, anxiety and locus of control. Therefore the goals of the following research are as follows:

1. To gain an accurate, though general description of the "frequently fearful" child in the cognitive, affective, and socialization domains.
2. To increase our understanding of how their anxiety affects their view of the future.
3. To increase our understanding of why these particular adolescents experience more than anxiety than their peers.

4. To increase our understanding of how these particular adolescents cope with their nuclear anxiety.

The method to explore these goals will be discussed in the following chapter.

III. Exploring the Fears of the Canadian adolescent:

Research design, hypotheses.

This chapter begins with a description of the research design developed to address the general research questions listed in the concluding comments of chapter 2. It continues with a description of the quantitative and qualitative instruments that were used to obtain data, the characteristics of the sample that participated in the research, and the method followed to conduct the research. After briefly acknowledging the limitations of the research design, some recent, additional analyses of an archived data base (that of Lewis et al., 1989) will be examined to demonstrate that the research of this thesis is not only justified, but long overdue.

General research design

As noted at the end of chapter two, the general goal of the following research was to obtain a reliable and accurate psychosocial profile of the adolescent who experiences frequent worry over the threat of nuclear war. For the purposes of this thesis, the concept of "frequent worry" was operationally defined as any individual who claims to have experienced feelings of fear and/or anxiety over the nuclear threat on an almost daily basis or, at the very least, once or twice a week. A distinction was made between those who claim to discuss, think about, or judge the importance of the nuclear issue and those who clearly indicate that it causes them fear. Whereas the latter state is one of obvious negative affect, the former group of behaviors appear to be more analytical in nature and thus represent acts of cognitive appraisal. An additional distinction was made between the constructs of "fear" and "anxiety." This thesis adopted the theoretical position stating that "anxiety" consists of a generalized, heightened state of discomfort, whereas "fear" is a state of focused anxiety toward a specific stimulus such as death by nuclear war (Spielberger, 1972).

Individuals who were considered to be members of the Frequent Worry group were studied from four general approaches:

1. Assessing the sources of, or influences on their nuclear fear;
2. Understanding the subjective nature of their fear;
3. Determining whether their fear affects their views of the future; and
4. Judging the effectiveness of their coping strategies.

Underlying all these research goals lay the issue of whether frequent worriers displayed signs of disordered stress-related behavior or whether they indicated more socially accepted behavior, i.e., the psychogenic disorder hypothesis versus the empowerment hypothesis. Keeping these global objectives in mind, the research was designed in three phases:

Phase One: Seeking trends.

The first phase consisted of a secondary analysis of the Canadian Children's Concerns about the Future (CCCAF) data that was previously reported by the author and his colleagues (Lewis et al., 1989). By sifting through this data base (currently archived at the University of Alberta) the author sought similarities and differences in response styles between individuals that appeared to be "frequent worriers" and the "average" Canadian student (a randomly selected control group of equal size). It was hoped that this analysis would provide results much like the results of a "pilot study" and thus provide a rationale for further research as well as assist in making initial hypotheses for subsequent study. The results from this secondary analysis of the CCCAF data are reported near the conclusion of this chapter.

Phase Two: The screening device.

The second phase of the research consisted of surveying the Edmonton junior and senior high school population with a modified version of the CCCAF survey. Conducting this recent survey provided two important functions. First, it provided the author with a more contemporary look at CCCAF data and therefore assessed the reliability of the data collected earlier by Lewis et al. In the second place, and more importantly, the replicative CCCAF survey acted as a screening device thus allowing the identification of Frequent Worriers and a suitable Control group.

Phase Three: The subsample interview.

The third and final phase of the research consisted of a structured hour-long interview with students identified as Frequent Worriers using valid psychological measures of both the quantitative and qualitative type. In order to provide local norms for a number of measures and scales used in the interview, an additional brief questionnaire was administered to a control group matched to the Frequent Worry group for age and gender. The analysis of the data from Phase Three was primarily descriptive in nature, however some inferential statistical procedures were employed in the hope of perceiving trends in the data that support recent theoretical speculation over nuclear fear, coping, and activism (e.g., Haste, 1989)

In the following section the author will provide detailed descriptions of the instruments and measures used in the research outlined above.

Instrumentation

The Canadian Children's Concerns about the Future (CCCAF) survey

The psychometric device that played the most central role in the research was either an original or modified version of the CCCAF survey. This instrument has been used extensively throughout Canada to assess children's impressions of the future. An early version of the CCCAF survey was initially distributed to Toronto youth by Sommers et al. (1985). A subsequent, expanded version of the survey was created by Goldberg and colleagues (1985) and used by Lewis et al. (1989). This latter, "original" version of the CCCAF provided the data for phase one of the study currently under discussion (see Appendix A for a very similar "modified" version of the CCCAF survey that will be noted below).

The CCCAF survey was structured in the following manner. Following techniques developed by Doctor et al. (1983) and Solantus et al. (1983), the first part of the survey asked students to state their three greatest hopes and three greatest worries relative to the future (data points 1 through 6; refer to far-right column of survey sheet in Appendix A). Answers to these "open-ended" questions were arbitrarily classified according to the categories developed by Solantus et al. (1983) (see coding instructions for "Questions I and II," Appendix E). The next section of the survey provided a list of nine possible "hopes" and nine possible "worries" as "...things others your age hope for (worry about)..." (data points 7 through 24). Students were asked to rate each hope and each worry on a scale from 1 (not important at all) to 4 (very important). Each set of nine items were selected from a 20-item list used by Doctor et al. (1983).

In the larger, third section of the survey, students were asked parallel questions about three future-oriented domains: the high unemployment rates (data points 25 through 39), personal job/career plans (data points 40 through 54), and the threat of nuclear war (data points 55 through 83). The general format of questions in each domain was as follows. In order to determine the amount of attention evoked in each domain, questions were asked concerning how often the respondent thought about or talked about the issue on a scale of 1 (not at all) to 4 (almost every day). These questions were phrased to cover the last month and were adapted from Solantus et al. (1983). Next, the survey attempted to assess how much the respondent had learned of each issue from six possible information sources rated on a scale of 1 (nothing) to 4 (a lot). Finally questions were asked about how much personal influence the children felt they or others had over each specific domain on a scale of 1 (none) to 4 (total control).

In the following "General" section students were asked questions addressing their 1) awareness of Canadian foreign affairs and qualities of Canadian nationalism, 2) concern over various methods of warfare, and 3) opinions on the perceived universality of their views.

In the last section, students were asked whether they had sought school or personal counselling for any of eight problems (data points 97 through 112). Embedded in the list were concerns about the three domains emphasized in the survey.

The CCCAF survey concluded with a number of questions used to identify each student's age, gender, academic level, citizenship, and parental occupation. These questions permitted demographic characterization of the sample and statistical analysis of the results.

The preceding description applies to the CCCAF survey that was used to create the data base for Phases 1 and 2 and to identify participants of Phase 3 of this research (see Appendix A).

Coopersmith Self Esteem Inventory- (CSEI) Forms "B" and "C"

The CSEI was chosen for this research due to it's high reliability and validity, it's popularity in the research and counselling of children, the availability of norms, and the ease of administration. Positive self esteem is considered to be highly correlated with creativity, academic achievement, resistance to group pressure, willingness to express unpopular opinions, and effective communication between youth and adults (Coopersmith, 1967). This impressive list of behaviors suggest the presence of effective coping strategies. Therefore, the CSEI was administered to members of the "Frequent Worry" group to assess their self esteem as well as the level of their effective interaction with the world.

Forms B and C of the CSEI are shorter versions (25 questions) of the longer, Form A (58 questions). Form B is designed for children aged 5 to 15 years and is identical to Form C (designed for college and adult groups) except where words like "people" have been altered to "children" and "place of work" has been altered to "school." Both Form B and C are easy to complete and provide an overall estimate of self esteem called "General Self."

The CSEI has strong reliability with an internal consistency of .86 for grade 6 and .80 for grade 12. The test-retest reliability is reported to be .70 over a three year period. Concurrent validity of the instrument is .33, which is significant at the .01 level. Predictive validity of the "General Self" scale of the CSEI is .35

No exact criteria for high, medium and low levels of self esteem are reported by Coopersmith (1967). However, due to the abundance of research using the CSEI, cut-off points for levels of esteem of students in the current research were easily determined, albeit in an arbitrary manner: students scoring above the seventy fifth percentile for their age and gender were considered to have high self esteem. Students scoring below the twenty fifth percentile for their age and gender were considered to be low in self esteem. All other scores were considered to be in the "normal" range.

The Nowicki-Strickland LOC Scale (N-SLCS) - Junior and Senior versions.

Due to the importance assigned to reliably identifying a student's sense of personal efficacy (Lewis, 1986b), the N-SLCS was chosen as the best normed instrument to measure whether or not an adolescent believes that reinforcement comes to him or her by chance or fate (external locus of control) or because of his or her own behavior (internal locus of control; see Nowicki & Strickland, 1973). The adolescent who is relatively high on internal locus of control will view himself or herself as more in control of events that impact on his or her life. Those who are more externally oriented will tend to believe their behavior is contingent upon luck, chance, and powerful others, or they will report their behavior is unpredictable due to the complexity of the world (Rotter, 1954). In the past, nuclear-related researchers have had to rely on impoverished 4-point scaled survey items to provide insight into an adolescent's internalized sense of self-efficacy (for example, refer to data point 70 in the CCCAF survey that was used by both Goldberg et al.,1985 and Lewis, 1986b). In contrast, a much more comprehensive measure of locus of control was provided by the use of the N-SLCS. Research participants in Phase 3 of the study rated 40 items that described "reinforcement" situations across interpersonal and motivational areas such as sense of affiliation, achievement, and dependency. The administration time of the instrument was (at most) 10 minutes. No modifications were required and all research participants found the task of completing the form simple and enjoyable.

The N-SLCS can be used for children in grades 3 through 9. A modified version has been created for those in senior high school grades and is identical to the younger version except that any references to "kids" has been altered to "people." The N-SLCS has good internal consistency overall with an average split-half reliability of .78 for grades 9 through 12. The instrument has strong stability with six-week test-retest correlations being .71 for fifteen year olds. The N-SLCS has fair concurrent validity, correlating significantly with three other measures of locus of control (Nowicki & Strickland, 1973). Published norms made available with the instrument allowed for direct comparison of sample scores to the general population.

The Purpose in Life Test- (PIL) Form "A"

A number of researchers have recently considered the major role that "meaning" or "purpose in life" could play in an adolescent's coping with modern day stresses (e.g., Newcomb, 1986; Newcomb & Lisa, 1986). According to Crumbaugh (1968) and Frankl (1984) the will to seek meaning in one's life is a fundamental aspect of developing a healthy personality and is negatively correlated with the psychopathology that results from the failure to develop a clear identity in a cold and impersonal world. The PIL test was developed as a measure of "existential vacuum" (Crumbaugh & Maholick, 1977). Existential vacuum is considered to be an "experience of lack of meaning and purpose in one's personal existence, which creates a feeling of emptiness, manifested primarily by boredom" (Crumbaugh, 1968, p. 227). Experiencing a sense of existential vacuum in one's life is not considered to be a mental or emotional illness, per se. Frankl (1984) considered at least 50% of the population to experience a lack of meaning in life at least once in their lifetime. However, those with a more clearly defined sense of meaning in life are expected to cope better with life's problems, have higher self esteem, and be generally more satisfied with their life. It was for these reasons that the PIL test was administered to members of the "Frequent Fear" group in Phase 3 of the research described herein. In order to save time in the interview and following the recommendations of the authors, only the first part of the PIL test, Form "A" was administered to students. The PIL was easily completed in less than ten minutes.

Due to the lack of reliable norms for the PIL, local norms were created by administering them same test to a control group (matched for age and gender) in Phase 3 of the research. A measure of internal consistency of the PIL scores obtained was computed (corrected by the Spearman-Brown prophecy formula); the reliability of the measures was considered to be fair with a coefficient of internal consistency equaling .31.

The State-Trait Anxiety Inventory (STAI) Form Y.

A central aspect of the research was to gain an accurate picture of the anxiety levels in adolescents expressing fear of the nuclear threat. For this reason, considerable time was spent in selecting the psychometric instrument that would measure the constructs of anxiety and fear. One major reason for selecting the STAI (Spielberger, Gorusch & Lushene, 1983) rests in the fact that previous research of adolescent fear of nuclear war has used portions of the STAI (e.g., Goldenring & Doctor, 1986; Hamilton et al., 1986). Other advantages in using the STAI deal with the fact that it takes little time to administer, is easy to understand, and is easy to score. The STAI has a very "clean" presentation value, that is, there is no mention of the term "anxiety" on the form.

The STAI provides two different scales of anxiety measurement. At one point, the respondent is asked to judge the personal relevancy of 40 statements that are designed to assess a relatively stable, generalized tendency toward anxious thoughts (Trait anxiety). At another point the respondent is asked similar questions, but these questions focus more on a specific, transitory state of anxiety (e.g., "How do you feel right now?"). This latter type of anxiety is referred to as State anxiety (Spielberger, 1972). An additional advantage of the STAI is that both State and Trait measures appear in one test (cf., the Taylor Manifest Anxiety Scale). Although the Multiple Affect Adjective Checklist (MAACL) provides two forms with similar measures (an "In-general" scale and a "Today" scale), the MAACL uses the same ambiguous items for both state and trait measures. Finally, Spielberger et al. (1983) note that the Trait form of the STAI may be administered first, and then following a slight delay, the State form may be administered. This procedure was adopted in the current study with one major alteration: similar to the technique reported by Hamilton et al. (1986), students in Phase 3 of the research were asked to "take a moment and *try* to imagine the scene following a nuclear attack." They were then instructed to "continue to think about your scene...or just think generally of the threat of nuclear war" as they filled out the State anxiety form of the STAI. This adjustment in procedure thus created an "Induced-State Anxiety" score specifically related to the fear aroused by imagining the nuclear threat. Induced-State Anxiety scores were obtained from both the Frequent Worry group and the control group in Phase 3.

The STAI was designed for individuals in grade 10 and above, but due to the fact that it is written below the grade 6 reading level, the authors note that it can be used with students in junior high school. The internal consistency of the STAI scales is very high and ranges from .89 to .95.

The Interview Format - Phase 3.

A structured interview in which members of the targeted Frequent Worry group are assessed was developed for the third phase of the research. The interview outline appears in Appendix B, and will be described page by page.

The interview began after a brief greeting in which discussion was kept at a minimum. During these initial comments the student was led to believe that they were selected for the interview in a random manner. This was the only point in the study were deception was used. The student was then given the Trait Anxiety portion of the STAI and was asked to complete a "brief pencil and paper form that would help describe their general feelings ." This initial, uniform approach to the interview was adopted by the researcher to ensure that all individuals completed the Trait form before establishing rapport with the interviewer. There then followed a longer introduction, where the building of rapport was pursued by the interviewer. The student was then asked a series of in-depth questions examining possible socializing factors that could be present in the home environment: parental occupation and level of education, parental political interests, club memberships, and favorite leisure time activities.

Students then completed the N-SLCS, after which they were asked to estimate the amount of time they spent watching various types of television programs, as well as their favorite TV show (see pages 2 and 3, Appendix B). They were then asked to complete "the following form... as it helps [us] know your likes and dislikes better," and were given a copy of the CSEI.

The following part of the survey assessed possible socializing agents in the school. Students were asked about their academic program, favorite school subjects, future post-graduate aspirations, and opinion regarding the value of their current education on their future. As part of this series of questions, students were asked to identify their "favorite" teacher. Once being identified, this teacher was approached and asked to complete a "social skills questionnaire" that assessed the social interactive ability of the student being interviewed (see section below).

After completing the PIL questionnaire, a small, unobtrusive tape recorder was indicated to the student as an "electronic secretary" and the machine was turned on. At this point, students were asked the first in a series of eight open-ended questions, this being: "If you could 'transport' yourself through time, where would you like to visit, and why?" All students found this question interesting and answered readily. This was followed by the question, "Looking into the future, what do you want to do with your life?" If students appeared confused over this latter question they were prompted with "what is a dream you have for the future?" After sufficient time was allowed for a response, the following question was posed:

> Imagine that, with a good campaign, strong support and guidance, you find yourself campaigning to be Prime Minister. You find that a great deal of the public *supports you* and how *you* want to get things done...What are the major things you would want to accomplish?

Once the student had answered the above questions to his or her satisfaction, the student was asked to answer a series of written questions regarding "general health." This questionnaire assessed the frequency of stress symptoms in the individual over the last month. The list was constructed from a series of symptoms reported by Bachman, Johnston, and O'Malley (1984).

At this point in the interview, the students were asked to "take a moment and tell [the interviewer] what [he or she] thinks about politicians and our political system." This question rarely required further prompts, however, many students were asked to specifically reflect on the role of the "average citizen" in the general political scene. Continuing with this political theme, students were then asked to rank the importance of the sociopolitical issues listed on page 8 of the interview guide (see Appendix B). To ensure that all students answered this question from a similar perspective, the interviewer stressed that "level of importance" was to be judged as "the amount of *worry* each issue causes *you* ."

The rating of sociopolitical issues was followed by a statement of disclosure by the interviewer. It was revealed to the student that they had *not* been chosen at random as originally indicated, but that they were approached to participate in the interview due to their "specific concern in an issue like the nuclear threat." The interviewer than asked permission to pose questions that focused entirely on their "concern... perhaps even fear, of the threat of nuclear war." No student refused permission and the interview continued with questions directed toward determining their age when they first became aware, and the level at which they felt "informed" of nuclear developments (on a five point scale) in comparison to the "average person."

After these initial questions, students were asked to take a few moments and try to visualize the scene following a nuclear attack. After a slight delay, during which few students indicated difficulty in developing a mental picture, the students were asked to rate their visualization on "a scale of 1 to 10...a '1' being very hazy and a '10' being extremely clear...like a photograph." They were then asked to describe the image in words. The number of words noted in these statements acted as an indicator of the students' verbal fluency. They were then instructed to "continue to think about your scene...or just think generally of the threat of nuclear war" as they filled out the State anxiety form of the STAI. This procedure thus created the "Induced State Anxiety" score described above.

By this time a strong sense of rapport had often been established between the interviewer and the student, This sense of rapport was instrumental in validating the interviewer's ability to pose the more reflective questions that followed. A brief discussion on how fear affects different people in different ways led to the students being asked to rate, on a five-point scale, how fear of nuclear war affected them: did it "stop them cold..."

or did it "get them fired up"? Answers to this question provided the researcher with a rough measure of the student's propensity to respond to their fear in a debilitative or facilitative manner.

Students were then asked two crucial questions. First, the were asked to "explain" their fear of nuclear war. If the student required prompting, every attempt was made by the researcher to gain an understanding of the qualities of the nuclear threat and nuclear war that evoked anxiety in the student. Following this, the students were asked to describe how they coped with their feelings of fear and anxiety ("how do you make it go away?"). In an attempt to gain an encapsulating statement that would reflect the general nature of the students' method of dealing with nuclear-related stress, the last open-ended question of the interview asked the participant to describe the "best attitude" to be adopted with regards to the threat. The interview, which rarely lasted more than an hour, was then concluded with a debriefing statement and a question and answer period.

The Control Group Interview Format - Phase 3.

Certain measures created specifically for the interview of Frequent Worriers lacked published norms (e.g., PIL) or required local norms (e.g., favorite television programs). For this reason, a questionnaire was developed that was self-explanatory in its use and allowed for group-administration. This questionnaire, found in Appendix J, was administered to students matched, by age and gender, to the "frequent worry" group. As can be seen in Appendix L, the Control group questionnaire contained identical questions addressing television viewing, school, the PIL test, stress symptoms, sociopolitical issues, and the Induced-State format of the STAI.

The Social Skills Questionnaire - Phase 3.

One of the issues explored in this research was whether children who express their fear of the nuclear threat are our "future leaders" or whether they are psychologically "at risk." Therefore, it was necessary to obtain some objective measure of the Frequent Worrier's general social skills and leadership behavior. Unfortunately, all available rating scales required too much time to complete and were too detailed for the general nature of the score being sought for this study (e.g., The Behavior Rating Profile). As a result, a special scale that assessed the student's general interactive and leadership abilities was created for this study (see Appendix H).

As will be recalled from the description of the hour-long interview of Frequent Worriers, students were asked to identify their "favorite" teacher. This teacher was then approached and asked to complete the social skills questionnaire (see Appendix I) The questionnaire consisted of eight descriptive statements upon which the student was to be judged. The teachers were provided with a seven point Likert-type scale for each statement extending from 1 "False Description" to 7 "True Description." Teachers filled out the forms at their leisure and were provided with stamped, addressed envelopes to facilitate the return of the completed questionnaires. The response rate was 98%.

Sampling procedures and Sample Characteristics

Phase 1.

The first phase of the research consisted of a secondary analysis of the archived data base previously reported by Lewis et al. (1989). This sample had been selected from 20 cities and towns in eight provinces (all but Quebec and Saskatchewan) plus the Northwest Territories, based on the following criteria: Each Board of Education randomly selected the appropriate number of compulsory classes (e.g., English, mathematics), from grades 7 to 12 inclusive, so as to provide approximately 70 students from each grade. Sample size varied slightly from school to school, according to enrollment. At the completion of the three year project (1984 to 1987), a total of 7,993 students, average age of 14.95 years, had been surveyed. The sample was 49% male and 51% female and was found to be representative of English-speaking Canadian adolescents based on SES, single-parent status, parental unemployment rates, ethnic origin, and country of birth (based on *Statistics Canada,* 1986).

A subsample of "Frequent Worriers" was identified within the data in accordance with the operational definition stated at the beginning of this chapter, that is, "any individual who claims to have experienced feelings of fear and/or anxiety over the nuclear threat on an almost daily basis or, at the very least, once or twice a week." Due to the sheer size of the national study data base, a significant number (n= 579) of students were found to occupy the extreme position of reporting "almost daily fear" (data point 59 in Appendix A) and were therefore placed in the Frequent Worry group for Phase 1 of this study (cf., Goldberg et al.,1985). A control group of equal size was randomly selected from the balance of the sample.

Phase 2.

The modified version of the CCCAF survey was distributed in the Edmonton area following a weighted cluster sampling procedure. The City of Edmonton was divided into areas consisting of 4 square blocks: northern inner-city, northern suburban, and southern inner-city, southern suburban. Out of each block, a Catholic School system junior and a senior high school were randomly selected and a Public school system junior and high school were randomly selected. As a result, eight schools participated in Phase 2 of the study. Invitations to participate in the research were made via the Cooperative Activities Program of the Faculty of Extension at the University of Alberta to the respective representatives of the Public and Catholic Boards of Education. Once permission had been granted to approach specific schools, students enrolled in mandatory classes were again sought to participate in the survey. At this point the sample was weighted in an attempt to capture the presence of Frequent Worriers as indicated in trends appearing in the national data described above. To this effect, 83 grade seven, 84 grade eight, 65 grade nine, 40 grade ten, 77 grade eleven and 63 grade twelve students were surveyed yielding a total sample of 412 students.

Of the students surveyed, 48% were male and 52% were female. The majority had been born in Canada (71%) and lived with both parents at home (77%). A noticeable ethnic background appeared in this sample, possibly due to the direct attempt to survey inner-city children: 35% of the respondents spoke a language other than English in the home. A large majority of the respondents (94%) were enrolled in a regular academic program rather than a vocational-skills program.

Following the operational definition outlined at the beginning of this chapter, the 3% of the sample reporting daily fear over the nuclear threat and the 11% experiencing fear once or twice a week were assigned to the Frequent Worry group (yielding 58 individuals, or 14% of the sample of 412).

Phase 3.

Students participating in Phase 2 of the research were asked to place their name on their questionnaires thus allowing the researcher to identify and approach participants regarding the interview stage of the study. By the end of the 1989 spring term, all members of the Frequent Worry group had been approached and encouraged to participate in the study either through their school, by letter, or by telephone. Of the 58 students contacted, 36% agreed to be interviewed (n=21 or 7 "almost daily" individuals and 14 "once or twice a week" individuals). Of these individuals, 52% were male and 48% were female. The age range was 12 to 17 years, with an average age of 15.0 years.

The students who agreed to be interviewed appeared to represent the the "average Frequent Worrier" for the Edmonton sample. For example, membership in the Edmonton Frequent Worry group that acted as the source of the smaller interview group also consisted of 52% male and 48% female respondents, with an age range of 12 to 19 years (average age equaled 14.8 years). Further demographic characteristics of the larger

Frequent Worry group were as follows. The majority (93%) were enrolled in a standard academic program and were born in Canada (74%). Most students lived at home with both parents (69%), while the balance lived with their mother (16%), father (13%) or Guardian (2%). Although English was the dominant language spoken at home, the ethnic nature of the sample was again apparent in this subsample by the fact that 37% of the group spoke a different language at home. The parental unemployment rate in this group was typical for Edmonton at the time of the survey, it being approximately 12% (based on father's occupation).

To act as a comparison group to members of the Frequent Worry group, 21 students matched for age and gender where approached to complete the control group questionnaire outlined above. Due to the voluntary nature of participation, 2 questionnaires were left spoiled or incomplete, yielding a total of 19 students acting as controls to the Frequent Worry group.

The following section describes the procedures followed to implement the research.

Method

After acquiring permission to conduct the research from the respective Boards of Education in late February, 1989, the researcher approached school principals to arrange dates for the administration of the modified CCCAF survey. Due to the simple descriptive nature of the CCCAF, most principals decided that gaining parental permission for student participation was unnecessary. One junior high school principal requested a parental permission form (see Appendix C) though it is unknown whether or not the document was distributed to the students.

The modified CCCAF survey was administered by the researcher in group settings (school libraries and common rooms) or by a teacher following strict guidelines (see Appendix D). It is important to note that every attempt was made to avoid biasing the attitudes of the students before they began answering the questionnaire. No mention of the word "nuclear" appeared in the questionnaire's letter of introduction, in the title of the survey, nor in the teacher's copy of the survey's *Administration Directions*. As noted in Appendix D, the supervisory teachers were specifically requested to have the students complete page 1 (those open-ended questions dealing with spontaneous hopes and worries) without looking ahead into the survey, and, once having completed page 1, to not allow students to return to the page to alter their answers. These latter restrictions greatly reduced the chance of answers to early questions in the survey being biased by the subsequent response style of the student.

After the completed surveys were collected, a considerable period ensued during which the data from the 412 individuals was transferred to machine-readable formats. The transfer and coding of information was managed through volunteer assistance, requiring the Coding Instructions outlined in Appendix E, and the use of card-punching facilities at the University of Alberta, Division of Educational Research Services. The total data base was input to the University's MTS computer system by August, 1989.

Members of the Frequent Worry Group (n=58) had been identified much earlier in the year (May, 1989). A concerted effort was then made to contact members of this special target group before the initiation of the summer holiday period (July to August). With the assistance of school principals, letters of introduction concerning the third (interview) phase of the study were distributed to parents (Appendix F) and students (Appendix G) by the beginning of June. Those students who wished to volunteer for the interview were generally quick to respond to the research.

Interviews were then conducted throughout the summer months and into the autumn of 1989. The interviews were conducted in schools, public library conference rooms and even, on two occasions, in public parks.

The last stage of the research involved the creation of a control group to provide comparative norms for the responses given in the Frequent Worry group interview. To manage this, the aid of participating schools was again enlisted, and an appropriate number of students completed the questionnaire displayed in Appendix J.

The following section describes the general approach that was adopted toward the analysis of the data.

Data Analysis

CCCAF- Phases 1 and 2.

The data obtained from the national Canadian CCCAF survey and the smaller, more recent Edmonton sample were submitted to statistical analysis. Most trends in the data were observed by constructing crosstabulations of dependent variables while controlling for membership in either of the Frequent Worry or Control groups. Due to the nature of the data, statistically significant differences were tested by non-parametric procedures, principally using a Chi-square analysis with a significance level of at least .05 and indicating a strength of relationship that was at least .20 (Cramer's *V* or Phi value). When, as in the larger samples, it could be assumed that the scores fell in a normal distribution, t-tests were conducted with a rejection criterion set at $p>.05$.

Scores obtained from the CCCAF survey were most often treated at face value and so were simply compared. However, at three separate places in the survey, composite scores where computed to help address three specific issues raised by this thesis. The first composite score was designed to assess the amount of preoccupation indicated by the survey respondents over the major CCCAF domains of unemployment, job/career plans, and the nuclear threat. The scores were meant to reflect a cognitive factor, i.e., a measure that indicated the level of thought or discussion inspired by either of the three domains.

Referring to the survey in Appendix A, the Unemployment preoccupation score was obtained by summing data points 25 to 28, plus number 30. The job/career preoccupation score was the sum of data points 40 to 43, plus 45, and the Nuclear threat preoccupation score was the sum of data points 55 to 58, plus 60. Due to the fact that students rated each data point on a four point scale, the possible range of a preoccupation score could extend from 5 to 20. These composite scores were very similar to the Preoccupation Scores described by Goldberg et al. (1985) and Lewis et al. (1989) except that in each of the more recent computations the direct question assessing the domain-inspired "fear" (data points 29, 44, and 59) was dropped to avoid confounding the cognitive/preoccupation quality of the score.

A second composite score was developed to provide an additional measure of cognitive-based concern over contemporary issues. Students were asked to "rate the importance" of a list of problems that "others list as worries" (data points 16 through 24, Appendix A). The students were provided with a Likert-type 4 point scale extending from 1 "Not important at all" to 4 "Very important." An assessment task of this sort is highly cognitive in nature, although it can be argued that the results of this task could indicate some measure of preoccupation or rumination on the students part and not merely represent the students ability to recognize socially-endorsed issues. Therefore, a composite score, called the Concern Scale, was created by summing the responses to data points 16 through 24, thus yielding a possible score range of 9 to 36.

The third and last composite score developed for statistical analysis represented an attempt to create a score from the existing CCCAF data base that might indicate possible emotional instability in the survey respondent. After extensively studying the survey questions it was reasoned that if a student reported that they had met with school and/or personal counsellors concerning problems in the classroom and at home, it could be assumed that they were, at the very least, experiencing moderate difficulties in their personal lives . Although by no means a valid and or reliable indicator of psychic distress, a composite score called Emotional Instability was created by summing the responses to questions asking, "Have you seen anyone at school for advice or counselling about....problems with a class (data point 98)....problems with a teacher (data point 99)?" and "Have you seen a counsellor or therapist outside of school about....problems at home (data point 108)....personal problems (data point 109)?" Due to dichotomous nature of the possible responses to these questions ("yes" or "no"), differences in response styles between the Frequent Worry and Control groups were tested using a non-parametric Median test.

Phase 3 - Quantifiable data.

The analysis of data provided by the quantifiable paper-and-pencil measures administered in the interview portion of the research consisted primarily of comparing results to published norms (e.g., STAI-Trait; N-SLCS; CSEI) or norms provided by the Edmonton control group (STAI- State; PIL; Amount of TV viewed; Views toward school, etc.). In the latter case, various techniques were employed in testing for differences between groups, ranging from t-tests for unpaired (independent) groups, Chi-square tests, and correlational analyses.

A number of demographic variables required classification schemes. Parental occupations were classified according to the standards set by Statistics Canada (1980) and levels of income were estimated from data provided by Census Canada (1988). A method for classifying the levels of parental education was adopted from Statistics Canada (1988).

Students were then asked about the "political interests" of their parents in order to determine the degree to which their own sociopolitical beliefs were influenced by the home environment. The level of political discussion for both Fathers and Mothers was rated according to the following criteria:

HIGH: Frequent (once or twice a week) discussion with friends or family; Canadian domestics and foreign policy and/or other national politics.

MODERATE-HIGH: Occasional (once or twice a month) discussion; Parents stress the importance of voting; Parents encourage the stating of political beliefs.

MODERATE: Occasional political discussion; Parents are reported to "usually" vote.

MODERATE-LOW: Infrequent discussion of politics - only around election time. Occasional voting.

LOW: No discussion whatsoever; Little or no political interest or discussion shown by parents. Voting behavior unknown or absent.

The nature of clubs and organizations in which students participated, as well as their description of favorite leisure time activities were noted merely to determine whether any member of the Frequent Worry group had devoted time to social and/or political issues. Similarly, the type of television programming viewed by Frequent Worriers was classified into arbitrary categories to aid in the comparisons made to the control group TV viewing habits. These categories were: News, Action/drama, Comedy, Documentary/educational, Game shows, Science Fiction, and Other (which usually included references to Soap Operas or sports events).

Students were asked to list their favorite school subjects in an attempt to determine whether classroom discussions or peculiarities in program selection were influencing the incidence of thoughts about the nuclear threat. The raw data listing their first choice was compared to the answers of the control group. To aid in further statistical analysis, the answers of the Frequent Worry group were coded into the following general categories and compared to the control group: Humanities, Natural sciences, Social sciences, Mathematics, and Physical Education. When asked about their future (post highschool graduation) aspirations, the answers of the Frequent Worry group were coded into the general classifications of "University, College, Work," and "Other (e.g., travel)" and compared to the control group. Finally, the "Importance of School" question that appears on page 3 of the interview (Appendix B) merely had it's options a) to e) altered to represent the numbers 1 through 5 to allow for statistical comparisons.

Relative to the nuclear domain, the age of students when they first became aware of the threat was recorded to aid in the search for possible correlations with level of expressed fear, etc. The level at which students felt they were informed of the nuclear threat and the effects of their fear were both rated on five-point scales (all questions appear on page 9, Appendix B).

Phase 3 - Qualitative data.

Due to the direct nature of the open-ended questions in the interview, a more qualitative, though rudimentary Content Analysis of the responses was used to analyze results (Berg, 1989). The responses to eight questions were considered from a Content Analytic perspective (page numbers refer to Interview pages in Appendix B):

1) The "transport through time" question (p. 4),
2) The "what do you want to do with your life" question (p. 4),
3) The "Prime Minister- political platforms" question (p. 4),
4) The "thoughts about politicians/political system" question (p. 7),
5) The "describe the scene after a nuclear attack" question (p. 9),
6) The " what causes fear" question (p. 9),
7) The "how do you cope" question (p. 10), and
8) The " what is the best attitude to adopt" question (p. 10).

Due to the purposive sampling (Gassner, Ksander, Johnson & Berg, 1983) used to select this unique group of individuals for the in-depth interview, independent raters were trained to analyze student's responses for specific concepts and themes. The raters' guidelines were as follows:

Question 1 (as listed above): Is there a reference to the past, and if so, what is the emotional quality of the reference? Is there a reference to the future, and if so, what is the emotional quality of the reference?

Question 2: Does the respondent show any fear or dread of the future? Does the respondent show any inclination toward satisfying social, global concerns or does he/she lean more toward seeking self-oriented satisfaction?

Question 3: What is the general nature of each political platform mentioned by the respondent:

Domestic (social problems, e.g., drugs, crime, abortion),
Environmental (pollution),
Humanitarian (Aid to the poor, Racism),
Peace (Anti-nuclear, no war in general),
Economic (Tax, unemployment, wages, Free Trade).
Is there any indication of rank ordering in the respondent's answer?

Question 4: What is the *general* tone of the respondent's view toward politicians, positive or negative? What does the respondent feel about the role of the average citizen in the current political system, is it a negative or positive feeling?

Question 5: How many words are used to describe the scene following a nuclear attack? What are the general qualities of the described scene?

Questions 6 & 7: See below.

Question 8: What general theme dominates their attitude toward the threat: pessimistic or optimistic, avoidant or approach?

The above list does not include questions 6 or 7. These latter questions required more involved phenomenological analyses of the respondents' answers and so will be considered in greater detail.

For the question exploring the fundamental elements that surfaced in the student's fear of nuclear war (number 6), independent raters were trained to pursue an Open Coding Technique similar to that proposed by Strauss (1987). General thematic elements emerged from the repeated analyses of the answers to question 6 and are reported in the results section of the thesis.

The answers to question 7, dealing with respondents' coping strategies, were analyzed following a much stricter criteria than any of the other open-ended questions. Ebata & Moos (1989) proposed that coping methods could be classified along two separate axis. One axis extends from a behavioral (emotive) form of coping to a more cognitive style of coping. The second axis extends from an approach-to-conflict strategy to an avoidance-of-conflict strategy of coping. Following this theoretical framework, the researchers proposed eight possible coping styles. The effectiveness of these various coping styles will be considered in more detail in the results section of this thesis. For the present purposes it need only be noted that the responses to question 7 were classified by using these eight categories (Ebata & Moos, 1989):

Approach Methods:	Logical Analysis	Positive Reappraisal
	Guidance/Support	Problem Solving
Avoidance Methods:	Cognitive Avoidance	Resigned Acceptance
	Alternative Awards	Emotional Discharge

Limitations of Research

The major limitation of the research falls primarily in the realm of dealing with the demand characteristics of the research design. For example, students may have responded in a socially-desirable way on the CCCAF survey, claiming that the nuclear threat is a major "personal" concern, but then, when confronted in person, fail to express similar conviction or tend to exaggerate their concerns. The research design has adopted every reasonable precaution to ensure that students will not alter their answers to reflect socially desirable characteristics. For example, in the administration directions of the CCCAF (Appendix D) it is clearly indicated that students are not to be allowed to return to page one and alter their "spontaneous" responses. Regardless of the number of precautions undertaken, the regrettable fact is that problems such as these exist in all research of this type and should not undermine the general value of the results. In most cases, the benefits of the research far outweigh the limitations imposed by the demand characteristics of survey research.

The results from the research conducted in phases 2 and 3 of this thesis are restricted by the sampling of the student population. Only Edmonton area junior and senior high school students were studied to any depth, and so it would be incorrect to generalize results to the student population as a whole. In addition, the research results are dominated by correlational and non-parametric statistical analyses; it would be a severe error to assume that causal relationships exist between variables that demonstrate even the strongest of correlations.

Finally, the generalization of research results is restricted by the fact that the data were collected before major political changes began to occur in Eastern Europe in the Fall of 1989. For example, it could be argued that the rapidly changing appearance of the Warsaw Pact countries has eased Cold War tensions and in so doing influenced students' perceptions of the nuclear threat. Whether or not political changes such as these alters an individual's perception of the nuclear threat is unknown. However, some students in the research clearly indicated that they do not live in a political "vacuum." For example, a number of students being interviewed during the summer of 1989 made references to the Tiananmen Square Massacre of June 4, 1989. Still, the following research was meant to be less a study of a single political concern as it was meant to be an analysis of the psychological and social factors that operate in an adolescent who reports unusual levels of anxiety over an issue like the nuclear threat. Therefore, although the importance of this latter limitation is debatable, the first two limitations listed above should be kept in mind when interpreting research results.

This chapter concludes by noting the recent, secondary analyses of the Lewis et al. (1989) CCCAF data base, that is, "Phase 1" of the research. The results are reported here in very general terms in order to demonstrate that the research of the subsequent phases, reported in chapter 4, was not only justified, but long overdue.

Initial results of the national CCCAF survey (Phase 1)

The sample characteristics of the archived national CCCAF study are described in detail on 64 of this thesis. By submitting this older data base to a secondary analysis, the researcher attempted to use the results much as one might use the results of a pilot study: seeking trends that might help create hypotheses for the subsequent, more in-depth phases of the research. Unfortunately, the general profile of the Frequent Worrier that emerged from this early analysis was far from consistent. Indeed, the analysis of the national CCCAF clearly indicated that a general survey of this type could *not* indicate whether the adolescent who expresses frequent fear over the nuclear threat is psychologically at risk, or is empowered and self-efficacious. To prove this latter point, some of the more interesting results of the Phase 1 analysis shall be considered.

Results indicated that members of the Frequent Worry group were more likely to show greater preoccupation (thoughts and discussion) over the nuclear threat *and* job/career plans *and* the unemployment situation than the randomly selected control group. Frequent Worriers were likely to report more anxiety over job/career and unemployment issues as well. They reported gaining more information on the nuclear threat from the media and school than the control group, suggesting that Frequent Worriers were either more likely to actively seek information or would selectively attend to nuclear-related discussions. Finally, members of the Frequent Worry group were more likely to report that thoughts of the nuclear threat negatively affected their plans for the future. The above results suggest that the members of the Frequent Worry group are those individuals who are prone to worry and feel anxious about *anything*. In addition, they appear to increase their own misery by seeking more information about issues such as the nuclear threat. They indicate a poor ability to cope with their anxiety because they indicate that their perceptions of the future have been negatively affected.

However, an alternative portrait of the Frequent Worrier also emerges from the national CCCAF data. When expressing spontaneous concerns about the future, Frequent Worriers were more likely to adopt a global perspective; they would mention issues that were of world-wide concern, or they would refer to local issues that were related to the environment. In contrast, members of the control group were more likely to report concerns that were related to ownership of property, money, school and/or career. This "global perspective" of the Frequent Worry group appeared in another place of the survey: in contrast to the control group, Frequent Worriers were more likely to claim that their concerns for the world were shared with Soviet and American adolescents. The psychological profile of the Frequent Worrier emerging from the data reported in the preceding paragraph suggests an individual who is under stress and at risk. However, no differences were found in Emotional Instability between the Frequent Worry and control groups. In addition, the curious relationship between anxiety and control, reported by Goldberg et al. (1985) and others, appeared in the national CCCAF data: Frequent Worriers were more likely to report a sense of personal influence over the nuclear threat than the control group. Also, members of this group were twice as likely to claim they had taken part in anti-nuclear actions (considered by many writers to be a positive coping strategy; see Sommers et al., 1985; Goldberg et al., 1985). These latter discoveries seem to suggest that the Frequent Worrier is clearly not at risk, and that, in fact, he or she may be more effectively coping with the nuclear threat than the average adolescent.

Concluding remarks

This chapter began with a description of the research design developed to address the general research questions listed in the concluding comments of chapter 2. It continued with a description of the quantitative and qualitative instruments that were used to obtain data, the characteristics of the sample that participated in the research, and the method followed to conduct the research. After briefly acknowledging the limitations of the research design, some recent, additional analyses of an archived data base were examined. The data analysis in this initial stage of the study presented a puzzling and somewhat disorganized portrait of the adolescent who reports frequent worry over the nuclear threat. Unfortunately, this state of mystery over the profile of the Frequent Worrier has remained in nuclear-related research for almost three decades. The following chapter describes the research results that assist in unraveling this mystery.

IV. Seeking explanations:

Research results.

This chapter reports data accumulated during the second and third phases of the research described in chapter three. The chapter begins with an examination of some general results from the Edmonton, 1989 CCCAF survey (Phase 2) that acted as a screening device for isolating members of a Frequent Worry group. The Edmonton CCCAF results were found to closely replicate the National survey results (Phase 1) and so will be reported briefly. The chapter continues with a more detailed statement of results obtained from the interview portion of the research (Phase 3). This latter portion of the chapter will begin with the descriptive (quantifiable) results from the interview. This will be followed by the quantifiable data that could be directly compared to the control group. The chapter will conclude with qualitative data being examined in a descriptive manner.

Phase 2 results: Edmonton CCCAF Survey, 1989.

No gender or age differences were found between members of the Frequent Worry group (n=58) and a randomly chosen control group. Similar to the results presented at the conclusion of chapter 3, members of the Frequent Worry group in this second phase of the research were more likely to show greater preoccupation (thoughts and discussion) over all three domains of concern (job/career plans, the unemployment situation, and the nuclear threat) than a randomly selected control group. The differences between levels of concern expressed in either group was tested using the Chi-square statistic. The lowest Chi-square (χ^2) value (in this case, relative to differences in unemployment concerns) was 26.81, which, with 11 degrees of freedom (df), was highly significant ($p< .006$). Nevertheless, the Frequent Worry group was most preoccupied with thoughts of the nuclear threat ($\chi^2=76.2$, df=13, $p<.00001$, Cramer's $V=.82$).

An additional analysis of the Phase 2 CCCAF data involved the composite score called the Concern Scale discussed in chapter 3, page 74. A Mann-Whitney nonparametric test for independent samples was performed on the scores obtained by members of the Frequent Worry and control groups. The results suggest that Frequent Worriers rated more of the concerns (listed in data points 16 to 24) as "very important" than the control group ($U= 1175.0$, $z=-2.29$, $p< .02$ [2-tailed]).

Beyond the more "cognitive" assessments of important issues, Frequent Worriers were also likely to report more *anxiety* over job/career ($\chi^2= 21.5$, df=3, $p<.001$) and unemployment issues ($\chi^2= 10.6$, df=3, $p<.01$). As noted in the Phase 1 analysis, Frequent Worriers appeared to be actively seeking more information on the nuclear threat (or selectively attending to nuclear-related discussions). Although they did not appear to gain more nuclear information from the school environment than the control group, they claimed to get more information from newspapers, magazines, books, TV, friends, and family (lowest χ^2 value being 7.76, df=3, $p<.05$). This latter finding, especially relative to the apparent impact of family on nuclear information, emphasized the need to further explore the socializing agents in the Frequent Worriers' daily life (Phase 3).

As was found in the national CCCAF data, members of the 1989 Frequent Worry group were more likely to report that thoughts of the nuclear threat negatively affected their plans for the future (see Tables 1 and 2): they were more likely to claim that thoughts of the nuclear threat had a negative impact on their plans to marry and have children (Table 1; $\chi^2= 36.9$, df=3, $p<.0001$). As indicated in the data of Table 2, a tendency toward pursuing escapist behaviors as defense mechanisms appeared in the Frequent Worry group. Trends in the data suggest that they were more likely to state that thoughts of the nuclear threat made them want to "live for today and forget about the future" (χ^2= 17.7, df=3, p<.0005). Taken together, the results of Tables 1 and 2 suggest a very serious trend toward negative thinking in this group of young people. Unfortunately, demand characteristics imbedded in the survey questions limit the validity of the results. Some students may have been merely agreeing with the logic of the questions (data points 62 and 63, Appendix A) rather than stating that they actually *felt* that way. The possibility of response biases appearing in these particular survey questions emphasized the need for the indirect assessment of students' views toward the future, a need fulfilled by the interview portion of the research.

Similar to trends observed in the national CCCAF data reported in chapter 3, an alternative, more positive, view of the Frequent Worrier emerged from the Edmonton CCCAF sample. Table 3 lists the frequency with which students spontaneously reported worry in eleven classifiable domains (data points 4 to 6, Appendix A). As can be seen in the "Phase 2" column of the table, the Frequent Worry and control groups clearly differed in their response styles. Although both groups emphasized the importance of worry over matters relating to human relations (love, intimacy, friendship, etc.), Frequent Worriers were three times as likely as controls to report worry over issues of War and Peace, and two times as likely to report they were worried over Global Matters (human rights, over population, food shortages, etc.). On the other hand, members of the control group were twice as likely as Frequent Worriers to report worry over finding the right job, becoming employed, and gaining property/money. Some curious trends in the phase 2 data as well. For example, although Frequent Worriers appeared to demonstrate more global "consciousness" in their responses, they were *less* likely than members of the control group to report worry over a global problem: pollution. Nevertheless, the global perspective of the Frequent Worrier appeared to be a stable trait. As was found in the Phase 1 analysis, Frequent Worriers were more likely than controls to claim that their concerns for the world were shared with Soviet adolescents (χ^2= 4.02, df= 1, p<.05).

Although there is some evidence to support the view that the Frequent Worrier represents an individual who is under emotional stress, the Phase 2 analysis supported the finding of Phase 1 indicating no differences in Emotional Instability between the Frequent Worry and control groups ($\chi^2 = .21$, Two-sample Median Test, n.s.). In addition, the data of Table 4 suggests that Frequent Worriers were more likely to report a sense of personal influence over the nuclear threat than the control group ($\chi^2 = 24.84$, df=3, $p<.0001$). However, the Frequent Worriers isolated in the Edmonton sample were *not* more likely to claim they had taken part in anti-nuclear actions - in direct contrast to trends noted in Phase 1 of the study.

Table 1

Crosstabulation:
Influence of nuclear fear on plans to marry and have children by Group membership

	COUNT EXP.VAL ROW % COL % TOT %	Group		
		CONTROLS	FREQ WOR.	ROW TOTAL
Effect plans to marry, children?	NOT AT ALL	43 27.8 76.8% 75.4% 37.4%	13 28.2 23.2% 22.4% 11.3%	56 48.7%
	VERY LITTLE	11 14.4 37.9% 19.3% 9.6%	18 14.6 62.1% 31.0% 15.7%	29 25.2%
	SOME	2 8.9 11.1% 3.5% 1.7%	16 9.1 88.9% 27.6% 13.9%	18 15.7%
	A LOT	1 5.9% 8.3% 1.8% .9%	11 6.1% 91.7% 19.0% 9.6%	12 10.4%
	COLUMN TOTAL	57 49.6%	58 50.4%	115 100%

Table 2

Crosstabulation:
Influence of nuclear fear on plans to "live for today" by Group membership

		Group		
	COUNT EXP VAL ROW % COL % TOT %	CONTROLS	FREQ WOR.	ROW TOTAL
Effect plans to "live for today?"	NOT AT ALL	44 33.5% 65.7% 75.9% 37.9%	23 33.5% 34.3% 39.7% 19.8%	67 57.8%
	VERY LITTLE	9 11.5% 39.1% 15.5% 7.8%	14 11.5% 60.9% 24.1% 12.1%	23 19.8%
	SOME	2 6.5 15.4% 3.4% 1.7%	11 6.5 84.6% 19.0% 9.5%	13 11.2%
	A LOT	3 6.5 23.1% 5.2% 2.6%	10 6.5 76.9% 17.2% 8.6%	13 11.2%
	COLUMN TOTAL	58 50.0%	58 50.0%	116 100%

Table 3

Comparison of Spontaneous Worries
by
Group Membership

Phase 2 (Complete CCCAF Edmonton)		**Phase 3 (Subsample CCCAF Edmonton)**	
Frequent Worry n=58	Control n=58	Frequent Worry n=21	Control n=19
Human Rel. 22%	Wk.Emply. 19%	Human Rel. 25%	Human Rel. 30%
War. Peace 21%	Human Rel. 17%	War Peace 18%	School 21%
Global Mat.s 10%	School 13%	Pollution 10%	Wk.Emply. 15%
Own health 8%	Own health 10%	Wk.Emply 10%	Property$ 11%
Wk.Emply. 8%	Pollution 10%	Own health 8%	Own health 9%
School 8%	Property$ 9%	Other health 7%	War.Peace 7%
Pollution 5%	War.Peace 7%	School 6%	Other health 5%
AIDS 4%	Global Mat.s 5%	Global Mat.s 4%	Global Mat.s 1%
Violent Crime 4%	AIDS 3%	AIDS 4%	AIDS 1%
Property$ 3%	Violent Crime 2%	Violent Crime 4%	Pollution 0%
Other 10%	Other 5%	Property $ 1%	

Table 4

Crosstabulation: Sense of personal influence over preventing nuclear war by Group membership

	COUNT EXP VAL ROW % COL % TOT %	Group		
		CONTROLS	FREQ WOR.	ROW TOTAL
Personal influence	NONE	41 28.0% 73.2% 71.9% 36.0%	15 28.0% 26.8% 26.3% 13.2%	56 49.1%
	A LITTLE	12 19.5% 30.8% 21.1% 10.5%	27 19.5% 69.2% 47.4% 23.7%	39 34.2%
	A FAIR AMT	4 8.0 25.0% 7.0% 3.5%	12 8.0 75.0% 21.1% 10.5%	16 14.2%
	A LOT	0 1.5 .0% .0% .0%	3 1.5 100.1% 5.3% 2.6%	3 2.6%
	COLUMN TOTAL	57 50.0%	57 50.0%	114 100%

Phase 3 results: Quantifiable data: Descriptive.

Parental data

Table 5 lists the various occupations held by parents of the Frequent Worry group interviewed for phase 3 of the study. The occupations of main wage earners (in this case, almost entirely consisting of fathers) were categorized following the standard classification scheme devised by Statistics Canada (1980). The bulk of occupations represented (48%) were industrial in nature (production, fabrication and construction). The next largest group consisted of fathers employed in sales and service occupations (13%). One father was employed in each of the following categories: Engineering, Religion, and Teaching. Five of the fathers (24%) were either deceased or absent from the home environment. The estimated average paternal income, based on figures established by Census Canada (1988) was $24,346.00. Of the mothers, 48% were homemakers with no definable income. Of those mothers employed, the average income was $17,650.00. The latest estimate of average income for married Canadian males in full time employment was $23,411.00; for females, it was $13,027.00 (Census Canada, 1986). The Frequent Worry group represented in Phase 3 of the study consisted of children coming from double-income families (33%), families where the father was the sole provider (48%) and families were the mother was the sole provider (19%).

Table 6 summarizes the level of parental education using classifications established by Statistics Canada (1988). The average number of years of education for fathers was 12.84 (s= 4.36); for mothers, 11.65 years (s=3.43). While 35% of the fathers had received their education from a foreign institution, 42% of the mothers had done so. Comparisons to level of education in the Labour Force 1988 averages published by Statistics Canada suggests that the Frequent Worry group is slightly over-represented in the parental group holding Vocational College diplomas.

According to ratings provided by interviewed students (page 1 of Appendix B), parents of Frequent Worriers did not show any unusual propensity toward political discussions in the home environment. Using the scaling procedure described on page 76 of chapter 3, fathers appeared to initiate most discussions, but even so this occurred at moderate to moderate-low frequency. Only 29% of fathers initiated high discussion

Table 5

Occupational classifications of parents of Frequent Worry Group members

Father	Mother
Road Construction Foreman	Student
Water & Sanitation Foreman	Cafeteria baker
Contractor (self employed)	Accounting for family business
Small business owner	Homemaker
Deceased	Cafeteria cashier
Auto mechanic	Homemaker
Oil industry supervisor (in Malaysia)	Telephone operator (in Malaysia)
Heavy duty mechanic	Homemaker
Meat Packer	Homemaker
Chemical Engineer (V.P.)	Homemaker
Telephone Co. Instructor/manager	Surgical fitter (Pharmacy)
Welder (Foreman)	Homemaker
Contractor	Tailor
Deceased	Retail sales
Absent	Sterilizing technician
Structural Painter	Homemaker
Small business owner	Small business owner
Special Constable (RCMP)	Administrator (middle position)
Appliance repair	Homemaker
Absent	Geriatric care
Minister	Student

Table 6

Parental education of Frequent Worry Group members

Level of education	Father	Mother	Total %
Grades 0 to 8	n=3	n=4	19%
Grades 9 to 13	n=2	n=6	23%
Some Post Secondary Education	n=2	n=3	14%
Post Secondary Certificate or Diploma	n=5	n=4	25%
University	n=4	n=3	19%
Totals	n=16*	n=20*	100%

*Totals do not equal sample size of 21 students due to absent, deceased, or foreign (unknown) parents.

(2 fathers out of an available 17) or moderate-high discussion (3 out of 17 fathers). The majority of mothers (52%) indicated little or no political interests in the home.

Social interaction and skills

Table 7a lists the club/organization membership of the Frequent Worriers interviewed in Phase 3 of the study. None of the interviewed students belonged to social-activist or politically-oriented organizations. All references made by students to church-related club activities suggested that the organizations provided social gatherings for members. Furthermore, Table 7b indicates that Frequent Worriers participated in leisure activities that were normal for adolescent age. No references were made to inordinate amounts of time being spent in activities that could be considered sociopolitical in nature.

Table 7a

Frequent Worry Group club/organization membership

- Church youth group (social) (6)*
- Sports (school or organized) (4)
- Athletic Club (1)
- Dance class (1)
- Choir or Band membership (1)
- Air Cadets (1)
- Art club (1)
- Student Council (Social convenor) (1)

- None (5)
- Part time work (4)

Table 7b

Favorite leisure time activities of Frequent Worriers

- sports (9)*
- Social interactions with peers (casual to forming own clubs, etc.) (6)
- reading (fiction and non-fiction) (4)
- watching TV (2)
- video games (2)
- family downhill skiing (1)
- drawing (1)
- listening to music (1)

(* DENOTES NUMBER OF RESPONSES IN THIS CATEGORY; INDIVIDUALS MENTIONED MORE THAN ONE CATEGORY, SO NUMBER OF REPONSES ARE GREATER THAN 21)

From a different perspective, the members of the Frequent Worry group were not judged to demonstrate exceptional social-interactive or leadership skills. Teachers rated students using a social skills scale developed specifically for this study (see Appendix H). If, for descriptive purposes, the "Moderately Descriptive" label on the Social Skills questionnaire is considered to represent the "middle ground," the average score a student might expect on this form would be equal to 32. In actual fact, the average social skills score in the Frequent Worry group was slightly above this expected mean, it being equal to 37.19 (s= 11.25). However, the majority (63%) fell within one standard deviation of the mean. A further 16% fell above, and 21% fell below one standard deviation of the mean.

Nuclear-related data

Most students in the Frequent Worry group reported being aware of the nuclear threat by age 11.5 years (s= 2.25). One student reported knowing first about the nuclear threat at age 7. Two other students, in separate incidences, claimed they weren't fully aware of the threat until they were 16 years of age.

Members of the Frequent Worry group did not generally consider themselves to be highly informed over issues related to the nuclear threat. Students being interviewed were shown a five point scale and asked to rate whether they felt as informed as others their age ("yes"), less informed ("no"), or the same as others ("average"). This scale was then modified to represent levels of information: 1 (Low), 2 (low-average), 3 (average), 4 (high-average), and 5 (high). The average Frequent Worrier claimed to possess "average" to "low-average" levels of information on the nuclear threat ($\bar{x}$ = 2.76, s = 1.14).

On the other hand, Frequent Worriers demonstrated high ability in visualizing the scene following a nuclear strike. On a scale of 1 to 10, with a score of 10 indicating a mental image "as clear as a photograph" and a 1 indicating a "very hazy picture..if anything at all," the average student reported a mental picture considered to be equivalent to a 7. The distribution of scores around this average was negatively skewed. Whereas only one student reported that their visualization was hazy (score of 1), five students claimed to experience images rated as an "8" and seven students rated their images to be equal to a "9."

Members of the Frequent Worry group were also asked to place themselves on a five point scale that appeared to describe a range of reactions to the fear created by thinking of the nuclear threat (see page 12 of Appendix B). In actuality, this scale represented a graduated measure of moving from a "1," indicating extreme debilitative fear (feeling caught, helpless, or "frozen" in fear) to a "5," indicating facilitative fear (confrontational, active behaviors). Higher scores suggest higher tendencies toward adopting a facilitative, and thus, much more adaptive response to nuclear fear. The average score of the Frequent Worry group was 3.28 (s= 1.102), however the scores were again skewed in a negative direction. Whereas only three of the 21 individuals reported high debilitative reactions to their nuclear fear, thirteen individuals claimed that their fear acted in a facilitative manner.

Phase 3 results: Quantifiable data: Comparative.

Media and school influences.

Results from data bases such as the CCCAF survey have suggested that television increases adolescent awareness of the nuclear threat. Therefore, it was important to determine the viewing habits of the Frequent Worriers in comparison to a control group matched for age and gender. On page 2 of the interview reproduced in Appendix B, Frequent Worriers were asked to rate the amount of time they spent viewing each category of television programming. A similar task was presented to the control group. Separate paired (independent) t-tests were performed for each scale and no significant differences appeared between the groups. Table 8 provides an alternative way of demonstrating the "normal" nature of the Frequent Worriers viewing habits. Members of this latter group were asked to state their favorite TV program. Table 8 lists these programs in comparison to the programs listed by the matched control group. The programs were then classified into the general categories listed in the bottom portion of the Table. A visual analysis of the information provided in Table 8 clearly indicates that members of the Frequent Worry group display the same TV viewing habits as their peers.

Similarly, Table 9 indicates the favorite school subjects of Frequent Worriers in contrast with those subjects indicated by the control group (their first choice is reported only). A general perusal of the information in the Table suggests that the groups share similar academic interests. To test this assumption, all subjects listed by the students were coded under five major headings: Mathematics, Physical Education, Social sciences, Humanities, and the Natural sciences. Differences were tested using a Chi-squared analysis. As indicated in Table 10, no preference was shown for any academic area based on group membership (χ^2= 4.69, n.s.). Neither did differences appear concerning additional, more future-oriented attitudes toward schooling. For example, Control and Frequent Worry groups did not differ on their post high school graduation aspirations (χ^2= 2.85, n.s.). Both groups contained a majority of students seeking university and/or college educations, with only a minority considering immediate entry into the work force, unemployment, or travel (14% of Frequent Worriers, 31% of controls). In addition, students were asked to rate the importance of their current schooling on their future lives on a scale of 1 "Not at all important" to 5 "Very important" (see page 3 of Appendix B). This question was designed to assess trends toward defeatism in the views of the Frequent Worriers. No differences in rating the importance of school appeared between groups (independent t-test, t= 1.60, df=38, n.s.). Indeed, both groups rated the importance of school in a manner that indicated a clear sense of future and a strong belief in the relevancy of their current studies: score distributions were negatively skewed with the majority of students in both groups claiming their current studies were "quite" or "very" important to their future lives.

Self Esteem

Members of the Frequent Worry group completed the short version of the Coopersmith Self Esteem Inventory (forms B and C, depending on the age of the participant). Arbitrary cut-off points were established before the inventories were completed: students scoring above the 75th percentile for their age and gender were considered to have high self esteem. Students scoring below the 25th percentile for their age and gender were considered to be low in self esteem. All other scores were considered to be in the "normal" range. The largest groups of Frequent Worriers consisted of those demonstrating average (48% of the group) and high (34%) self esteem. Only 4 of the 21 Frequent Worriers interviewed (18%) scored "Low" in self esteem.

Locus of Control of Reinforcement

Frequent Worriers demonstrated a trend toward adopting an internalized locus of control, as measured by the Nowicki-Strickland Locus of Control Scale. Figure 1 permits visual analysis of this obvious trend for the reader (NB: lower scores denote internal orientation). Nine students (43%) showed a tendency toward extreme internalization by scoring below one standard deviation of the average score for children their age. As indicated in Figure 1, an unusual number of younger students (grades 7 to 9) appeared to adopt an internalized perspective. Only two students (two males, one in grade 11, another in grade 12) tended toward an externalized perspective, although both of these students scored well within one standard deviation of the mean.

Table 8

Favorite television program: Frequent Worry and control groups

Frequent Worry Group	Control
News	Growing Pains (3)
Soaps (4)	Full House
Cheers/ Night Court	Alf
MacGyver	Designing Women
Growing Pains (2)	Who's the Boss? (1)
Full House (2)	Matlock
Documentaries	Free Spirit
Who's the boss?	Living Dolls
Just the ten of us	Soaps (3)
Jim Henson hour	Dr. Who
Time of your life	Perfect Strangers
Family Feud	Mission Impossible
The Sports Network (2)	Night Court
The Cosby Show	L.A. Law (2)
Wonder years	
Star Trek	No clear favorite (3)
COMEDIES 10	COMEDIES 11
SOAPS 4	SOAPS 3
ACTION (DRAMA) 2	ACTION (DRAMA) 3
SCIENCE FICTION 1	SCIENCE FICTION 1
SPORTS 2	SPORTS 0
DOCUMENTARIES 1	DOCUMENTARIES 0
NEWS 1	NEWS 0
GAME SHOW 1	GAME SHOW 0
NO VIEWING/CLEAR FAVORITE 2	NO VIEWING/CLEAR FAVORITE 3

*(numbers in brackets denote number of times program mentioned)

Table 9

A comparison of favorite school subjects listed by Frequent Worry and control groups

Frequent Worry	Control
Mathematics (6)*	Mathematics (7)
Physical Education (2)	Physical Education (3)
Social Studies (4)	Social Studies (0)
Language Arts (English) (0)	Language Arts (English) (1)
Elementary level Science (1)	Elementary level Science (1)
Elementary level Computer (0)	Elementary level Computer (1)
Art (1)	Art (1)
Drama (1)	Drama (1)
Home Ec. (Food) (1)	Home Ec. (Food) (1)
Beauty Culture (0)	Beauty Culture (1)
Chemistry (2)	Chemistry (0)
Marketing (1)	Marketing (0)
Physics (1)	Physics (0)
Music (1)	Music (0)
Psychology (0)	Psychology (1)

*(Number in parenthesis indicates the number of respondents who listed the subject as their first choice; a zero indicates that no one in the subgroup selected the topic as their first choice)

Table 10

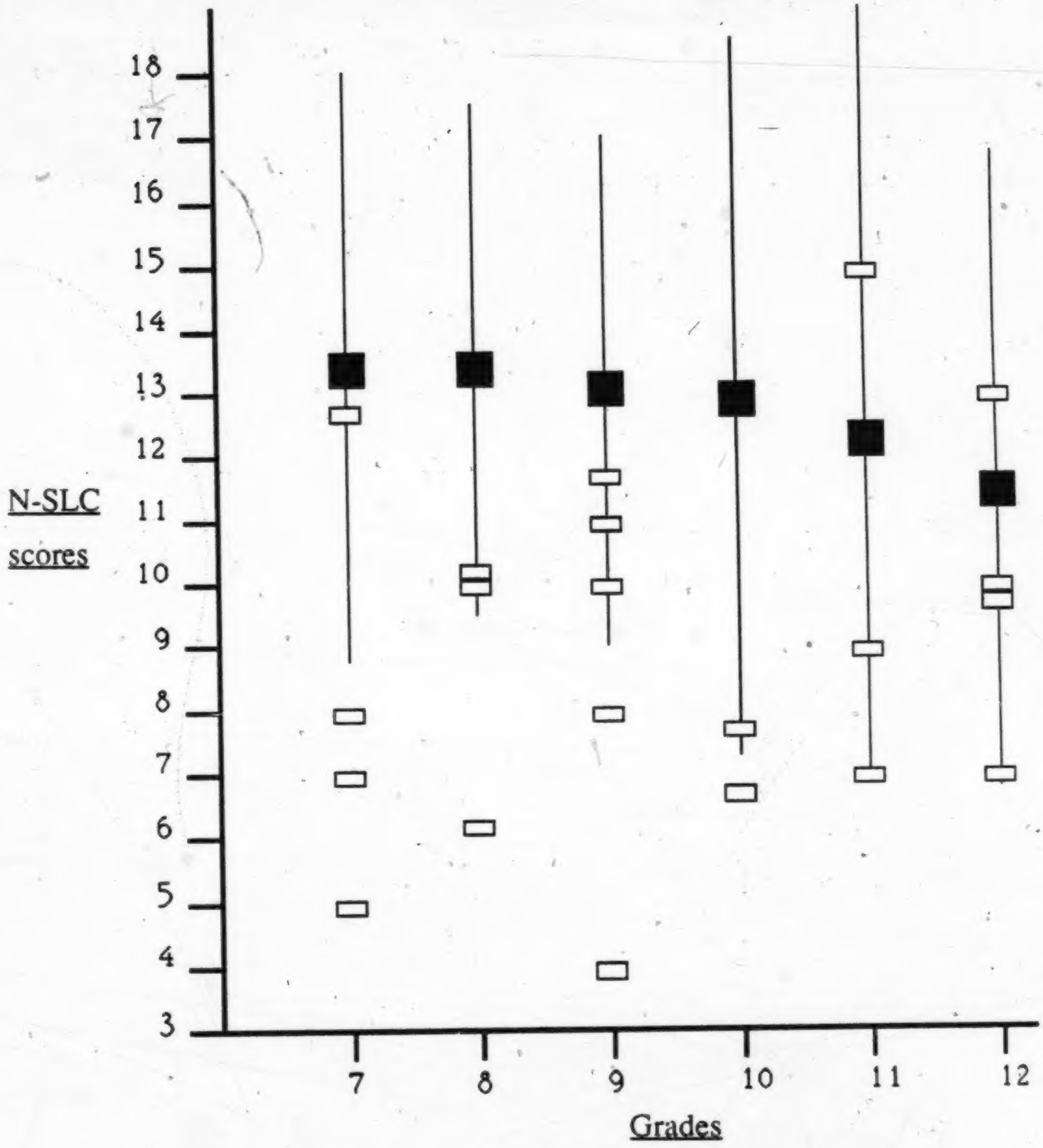
Crosstabulation:
Favorite school subjects
by
Group membership

	COUNT EXP VAL ROW % COL % TOT %	Group		
		CONTROLS	FREQ WOR.	ROW TOTAL
School subject	Math	7 6 53.85% 38.89% 18.0%	6 7 46.15% 28.57% 15.0%	13 33%
	Phys. Ed.	3 2.31 60% 16.67% 8%	2 2.69 40% 9.52% 5%	5 13%
	Soc Science	0 1.85 0% 0% 0%	4 2.15 100% 19.05% 10%	4 10%
	Humanities	5 4.15 55.56% 27.78% 13%	4 4.85 44.44% 19.05% 10%	9 23%
	Nat Science	3 3.69 37.5% 16.67% 8%	5 4.31 62.5% 23.81% 13%	8 21%
	COLUMN TOTAL	18 46.0%	21 54.0%	39 100%

Figure 1

Locus of Control scores

of Frequent Worriers compared to published norms



LEGEND: Box and whiskers represent means and one standard deviation from the mean. Open boxes represent scores.

Meaning in life

The Purpose in Life test (PIL) was administered to members of the Frequent Worry Group and their scores were compared with the scores obtained from the matched control group. Frequent Worriers consistently scored higher on the PIL than the control group. These differences were tested using a t-test for independent groups and found to be significant (t= 2.12, df= 38, p<.02 [one-tailed]).

Worry and anxiety.

By returning to Table 3, trends in students' spontaneously reported worries on the CCCAF can be compared between phases 2 and 3 of the study as well as between groups in phase 3 itself. A striking similarity in response styles can be seen between the smaller Frequent Worry group in phase 3 and the larger phase 2 Frequent Worry group from which the subsample was formed. The only significant difference appears in the rank ordering of two issues: worries pertaining to pollution appear to be more salient in the subsample and global matters were more worrisome to the larger Edmonton sample of Frequent Worriers. On the other hand, differences between Frequent Worriers and control groups selected in phases 1 and 2 of the study again appeared in the subsampling of phase 3. As indicated in Table 3, Frequent Worriers in phase 3 still considered issues pertaining to (nuclear) war and peace to be of greater worry than the matched control group. In addition, members of the control group again demonstrated a tendency toward worry over materialistic issues: controls were ten times more likely to report worries over property and money matters, and three times more likely to report worry over school grades than Frequent Worriers. When reporting the results of the phase 2 data listed in Table 3 (page 90, above) it was noted that controls were twice as likely to express worry over pollution than Frequent Worriers. It is interesting to note that in the subsample isolated for interview in phase 3 this trend is reversed: none of the randomly selected controls mentioned pollution as a worry, whereas 10% of the Frequent Worriers mentioned this as one of their three major worries of the future.

One of the tasks asked of students in the interview portion of the study was to rate seven sociopolitical issues, compared to each other, in terms of the amount of worry they evoked (Page 8, Appendix B). This task was presented to both Frequent Worriers and controls in an attempt to gain an accurate picture of adolescent worry over contemporary national and international concerns (e.g., Free Trade, AIDS, divorce, nuclear threat, etc.). No main effect was observed as a function of membership in either group: generally speaking, the controls claimed that the issues evoked as much worry as was claimed by the Frequent Worriers (F=3.006, df=1, n.s.). However, when the scores assigned for each issue were considered one at a time, Frequent Worriers expressed exceedingly more worry over the nuclear threat than the controls (t= 3.42, df= 18, p< .003); no differences appeared between groups on any of the other major sociopolitical issues.

Members of the Frequent Worry group began their individual interviews by completing the Trait-Anxiety form of the State-Trait Anxiety Inventory (STAI). The published norms for Trait anxiety in high school students suggest that the average male receives a score of 40.17 (s=10.53) and the average female receives a score of 40.97 (s=10.63). In the Frequent Worry Group, males received an average score of 43.00 (s=6.78) and females received an average score of 39.00 (s=8.23). In other words, the male and female Frequent Worriers received Trait Anxiety scores that fell at the 63rd and 48th percentiles, respectively.

A radically different picture of the Frequent Worrier became apparent when their scores for Induced-State Anxiety (nuclear fear) were analyzed. Students in both control and Frequent Worry groups were asked to visualize the scene following a nuclear strike, and, while retaining this internal image (or, if the image was unclear, while thinking of the nuclear threat in general) were asked to complete the "State" form of the

STAI, thus producing a rough measure of "nuclear fear." Obviously, it was expected that both groups would produce artificially-inflated scores when compared to the norms published for State Anxiety. It is interesting to note that this was the case for all students, on average, except for male members of the control group. For reasons that are unclear, the average Induced-State score in this group actually dropped *below* the expected "normal" State Anxiety score for individuals of this age. Nevertheless, the Induced-State, or nuclear fear scores produced from the Frequent Worry group were exceedingly higher than the similar scores produced by the matched control group. Frequent Worry females, on average, scored 67.3 which was significantly higher than the control females' average score of 48.7 (t= 4.59, df=19, p<.0002). Similarly, Frequent Worry males produced an average Induced-State score of 65.9, as compared to the male control group members' average score of 35.9 (t=7.89, df=17, p<.0001).

Stress symptoms.

Members of both Frequent Worry and control groups were asked to consider a list of "health problems" and to note the rate of their occurrence in the last month (pp. 5 & 6, Appendix B). Frequent Worriers were not found to report greater incidence of stress symptoms (headaches, insomnia, etc.) than the matched control group (t=-.719, n.s.)

Phase 3 results: Qualitative data.

Eight open-ended questions were presented to members of the Frequent Worry group during the interview portion of phase 3 (for transcripts of the responses to each question, refer to Appendix K). The nature of these questions justified a rudimentary Content Analysis of the responses. However, due to the directness of the questions and the purposive nature of the sampling techniques, independent raters were trained to analyze student's responses for specific concepts and themes. These themes were outlined on page 78 of this thesis and a summary of the results of the thematic analysis is provided below. Each question will be dealt with in turn. Inter-rater reliability for all questions was good to excellent . The average reliability quotient (agreements divided by agreements plus disagreements) was .81 (ranging from .72 to .90).

?

1) The "transport through time" question.

As the reader will recall, evidence from the CCCAF survey suggested that Frequent Worriers shared a general sense of pessimism and disregard for the future and a tendency toward "living for the moment." However, concern was expressed that the nature of the CCCAF questions may have biased the answers of the respondents. Therefore, the purpose of this first question was to provide the researcher with a "hidden" measure of the Frequent Worriers' view toward the future.

Generally speaking, the Frequent Worriers were evenly distributed in the direction they chose to "travel through time." Twelve students chose the past and ten students chose the future (one student expressed the desire to experience both). Of those who chose the past, only a minority (3 students) suggested that this was their choice due to a desire to either escape from the pressures of living in today's world or to find some sense in security in the simplified lifestyle of days long ago. Other reasons given for wishing to travel into the past were either to alter the past and so influence their personal fate, to experience the past for nostalgic reasons, or to satisfy personal curiosity over historic events.

Ten of the Frequent Worriers showed a preference to visit the future, thus bringing to question the claim that this group of individuals has "foreclosed" on their future perspective. All ten references to the future were emitted with a sense of excitement and anticipation. The three general reasons for visiting the future that appeared in their choices were: to directly benefit from technological advancements, to see themselves in the future, and to enjoy the increased quality of leisure time that was expected in the future.

2) The "what do you want to do with your life" question.

This question, in addition to question number 1 above, also provided the researcher with a disguised method of determining whether Frequent Worriers indicated any dread toward the future. As can be seen in the answers transcribed in Appendix K, only one student of the 20 who were asked this question indicated a sense of dread for the future. This latter student made clear references to the Fundamental Christian belief that Armageddon was to occur in the early 21st century and so believed that the future was limited. There is no doubt that this student considered nuclear conflict to be the source of this approaching holocaust.

Of the remaining 19 students who answered this question, the clear majority (14) made references to seeking self-oriented goals (a happy family, ownership of property, a stable career, etc.) Only 5 students made any direct or general reference to finding happiness in life by altruistically confronting societal and/or global concerns.

3) The "Prime Minister- political platforms" question.

All students considered this question, which consisted of playing the role of politician, in a very serious manner. Although two students indicated that they felt uninformed in political matters, the researcher was struck by the quality of the responses emitted by the group. The general themes underlying all of the answers were ones of seeking national stability, international safety, and global equity.

The largest group of "number one" political platforms were economic in nature. On the other hand, independent raters agreed that these economic platforms were strongly rooted in a clear desire to provide benefits to the common taxpayer. This tone of humanitarianism reappeared in the fact that the second most common "first platform" of the respondents was clearly humanitarian in nature (aid to the poor, dealing with racism, etc.). Encouraging international peace and promoting anti-nuclear policies was the third most common platform. One student considered pollution and another, domestic (social), problems to be of primary concern.

4) The "thoughts about politicians/political system" question.

Of the 19 students who answered this question, 15 adopted an extremely negative tone toward politicians in particular. Only 4 students described politicians in terms of being honest and hard working. All other references characterized politicians as being self-serving, untrustworthy, changeable, and insensitive to the needs of the electorate.

On the other hand, the majority of Frequent Worriers (14 out of 20) expressed the belief that the average citizen had an instrumental role to play in our political system. Of the six individuals who expressed a sense of powerlessness in the political structure, four of them were also students who harbored negative views toward the responsiveness of politicians, thus demonstrating an extreme sense of defeatism.

5) The "describe the scene after a nuclear attack" question.

In general, the descriptions of the scene following a nuclear strike provided by members of the Frequent Worry group were extremely vivid, thus supporting the tendency of respondents to report high visualization scores (see p. 81 above). For example, of the 19 students who answered this question, only one reported to have no image whatsoever, and 14 students provided descriptions using 25 words or more (the average length of description was 43 words).

Independent raters analyzed the content of student responses and found that four major themes appeared. These four themes reappeared in answers to question 6 (below): 1) the death of self and/or close family, 2) the death of all people, 3) the destruction of life on earth as we know it, and 4) the suffering of possible survivors.

6) The " what causes fear" question.

This question attempted to explore the fundamental elements that surfaced in the Frequent Worrier's fear of nuclear war. Independent raters were trained to pursue an Open Coding Technique similar to that proposed by Strauss (1987). Seven general thematic elements emerged from the repeated analyses of the answers and are listed in order of occurrence:

> DEATH OF HUMANITY: This appeared to be the most common basis of nuclear fear as experienced by Frequent Worriers. It appeared in references to the extermination of the human species.
>
> MEGADEATH: This term was created by the raters to describe the second most common attribute of nuclear war that dominated the adolescents' thoughts. Megadeath refers to the imagined death of all living things, human or otherwise, as well as the death of culture, institutions, art, music, etc.
>
> A SENSE OF POWERLESSNESS: The third most common fearful attribute of the threat of nuclear war appeared in the students' indication that they felt uneasy in how the threat was out of their control; that, by its nature, the nuclear war was ever-present, but unpredictable.
>
> THE "UNFAIR, UNJUST" QUALITY OF THE THREAT: Answers of this sort demonstrated higher degrees of frustration and anger than did answers indicating powerlessness. This theme was best typified by phrases such as, "Who gives anyone the right to use these weapons?" and "It is selfish, silly, and unfair to put the world at risk."

PERSONAL DEATH: This next most common theme appeared as direct references to the death of self or close family members due to a nuclear strike.

SUFFERING OF SURVIVORS: Answers of this nature focused on the mysterious and insidious nature of radiation sickness, as well as the pain and disfiguration that results from a nuclear blast.

THE "AWESOMENESS" OF NUCLEAR KNOWLEDGE/POWER: Finally, a small but significant group of students made reference to the overwhelming power of nuclear weapons *and our ability to manipulate such power* as a considerable source of their nuclear fear. Statements such as these came with a fearful sense that science had opened "Pandora's box" and concern over how this massive energy could ever be safely harnessed.

7) The "how do you cope" question.

Frequent Worriers provided a number of explanations concerning how they cope with their fear of the nuclear threat. These coping methods were categorized under the general framework of being either active ("approach") oriented or passive ("avoidance") oriented. Beneath each general framework are an additional four coping strategies (see p. 71 above and Ebata & Moos, 1989). Raters independently judged Avoidance methods of coping with the nuclear threat to occur in 62% of the possible 37 classifiable coping statements. These methods are reported first:

A statement typifying Cognitive Avoidance was the most common (33%). This method of coping is judged to be highly defensive and shows clear indications of mental withdrawal and escape. It is typified in statements such as " I try not to think about it" and "I just put it out of my mind." Next, a sense of Resigned Acceptance appeared in 11% of the coping statements. Students demonstrating this tendency were likely to say that they had learned to accept the threat of nuclear war because "nothing can be done to change it." A smaller number of statements (8%) were made that indicated that some individuals sought relief from nuclear fear by seeking Alternative Rewards. A coping method such as this appeared in direct references made by students with regard to distracting themselves by getting involved with new activities (e.g., sports). Finally, 8% of the statements indicated a tendency toward passively dealing with their fear by converting their feelings into Emotional Discharge. Emotions such as these were always aggressive in nature and usually consisted of directing anger toward the establishment and/or politicians.

A number of Approach methods of coping appeared in 38% of the statements made by Frequent Worriers. These coping methods were evenly distributed between two sub-categories outlined by Ebata & Moos (1989): that of Logical Analysis (19%) and Guidance/Support (19%). Some Frequent Worriers reported that they would deal with their nuclear fear by estimating things such as the possibility of a nuclear attack, reasoning about the intentions of politicians or performing a similar Logical Analysis of the justifiable nature of their fear. Few adolescents gave the impression that analyses such as these significantly lowered their feelings of fear for any extended period of time. A number of additional statements were made to show that Frequent Worriers would seek guidance and/or support in dealing with their fear by talking with family or friends. No students made statements that could be considered as "Positive Reappraisals" of the source of their fear, no doubt due to the fact that most would consider it extremely difficult to "see the good side" of the nuclear situation. Finally, none of the Frequent Worriers indicated that they had considered direct, confrontational ways of dealing with their fear (that is, the coping strategy of Problem Solving) by doing such things as joining youth groups, anti-nuclear organizations, etc.

8) The " what is the best attitude to adopt" question.

In general, the answers given to question 7 suggest that Frequent Worriers were unsure as to whether they could apply effective, approach-oriented coping strategies to their fear of nuclear war. When asked to state the "best attitude" one could adopt in facing the nuclear threat, 47% of this special group of adolescents made statements that were considered to be approach-oriented and optimistic. These latter statements dealt with the recognition that the common person could effect change on the political will, that it was acceptable and positive to express emotions in a sincere and honest manner, etc. A smaller group of five individuals (23%) expressed attitudes that were clearly not passive in their orientation but were obviously cynical, defeatist, or pessimistic. A typical statement of this "Pessimistic-Approach" attitude would be "I think we should go out there and change things...but I don't think anyone will listen." An additional five students were clearly pessimistic and avoidant in their attitude. For these individuals, "it's going to happen, so live your life until it does happen...just make the best of it." Only one student appeared to at least partially endorse an optimistic, though avoidant attitude toward the nuclear threat. In the views of this person, "why get so riled up about it?...it's always good to be concerned...but also to have a sense of 'care-freeness'."

Concluding remarks

This chapter has reported data accumulated during the second and third phases of the research described in chapter three. The chapter began with an examination of some general results from the CCCAF survey used in Phase 2 of the study. The Edmonton CCCAF results were found to closely replicate the National survey results of Phase 1. The chapter continued with a more detailed statement of results obtained from the interview phase of the research. This latter segment of the chapter began with the descriptive (quantifiable) results from the interview. This was followed by a report of the quantifiable data that could be directly compared to control groups. The chapter concluded with a descriptive examination of the qualitative data obtained from the interviews. In the following chapter the author will summarize these research results and discuss their implications.

V: Distinguishing myth from fact:
Discussion and Implications of Research

The analysis of data in chapter 4 has provided the reader with a description of various characteristics that typify the adolescent who expresses frequent worry over the nuclear threat. In this chapter the general picture formed by these many variables will be collected into one comprehensive whole. This task will be completed in the following manner: The chapter begins by summarizing the psychosocial profile of the Edmonton sample of "Frequent Worriers." Next, the contentious issue of whether Frequent Worriers are psychologically at risk (the Psychogenic disorder hypothesis) or healthy (the Empowerment hypothesis) will be addressed. At this point the author will present data that allows for an inferential and speculative analysis of possible interrelations between major variables. Finally, the implications of the research findings will be considered in the light of recent theorizing on social efficacy and activism. The chapter concludes with comments on the implications of the research in the fields of education and psychology.

A psychosocial profile of the Frequent Worrier

A general description of the adolescent who expresses frequent worry over the nuclear threat is in order. The following summative statement is based on the data obtained from the in-depth study of a volunteer group of Edmonton high school students who reported feelings of fear and/or anxiety over the nuclear threat *at least* once or twice a week. Although these results will be discussed in a general manner, it would be incorrect to assume that the results could be reliably extrapolated to the adolescent population as a whole.

As indicated by the data reported in chapter 4, the Frequent Worrier in this sample basically appears to be the "average" teenager for the "average" middle to low income home. There was no tendency toward distinct gender differences in the sample: Frequent Worriers were just as likely to be females as males. Therefore, it would be incorrect to claim that fear of the nuclear threat is primarily experienced by females. On the other hand, the age of the individual may contribute to the expression of fear over the threat (cf., Solantus, Rimpela, & Rahkonen, 1985; Goldberg et al., 1985). Age differences between Frequent Worry and Control groups were not found to be statistically significant in the second phase of the study. But of the students who volunteered for the interview, those in the senior grades (11, 12) were less likely to report fear than those in late junior high school (grade 9). Nevertheless, the detailed data obtained about the students' home environment do not support the claim that anti-nuclear sentiment appears mainly in children from higher income brackets (cf., Coles, 1984, 1986b; Hamilton, et al., 1986b). In addition, parental occupation classifications in the sample demonstrated no bias toward professional careers that were especially oriented toward the environment, politics, ethics, or religion. This combined with data suggesting that there was very little political discussion in the home environment severely weakens the argument that the parent acts as a significant socializing agent for a young persons' anti-nuclear inclinations (cf., Coles, 1986a).

Researchers such as Goldenring and Doctor (1986) have suggested that children who are sensitive to the nuclear issue may actively seek out media exposure dealing with the topic. Although this might be the case with some of the Frequent Worriers studied in this research, none of them openly admitted it. In fact, the researcher recalls that a number of students who reported having seen the ABC television movie "The Day After" described the experience with a sense of regret, rather than an event that was actively pursued to completion. On the other hand, research has suggested that students report television to be their main source of nuclear-related information (Lewis, 1986b). When compared to a control group matched for age and gender, the Frequent Worry group in this research indicated no unusual propensity toward watching news shows, documentaries and/or educational programs that might act as a source of nuclear information. Indeed, most Frequent Worriers considered themselves to be just as informed about the nuclear threat as other adolescents their age. How is it then that Frequent Worriers report TV to be their major source of nuclear information but then indicate normal TV viewing habits? Perhaps the best explanation for this apparent contradiction in the research findings is that Frequent Worriers do not actively seek nuclear information but are, for some reason, more "sensitized" to the topic and therefore susceptible to its presence in news items and current affairs. This leads to the natural question: "how is it that they have become more 'sensitized?'" - a question that can only be properly answered by elaborating on the psychosocial profile of the Frequent Worrier.

Unfortunately, no other obvious socializing agent or agency appeared in the profile of the Frequent Worrier to assist in determining how they became sensitized to the nuclear threat. None of the interviewed students belonged to political or socially-active organizations and all of the students described favorite leisure time activities that were entirely normal and appropriate for their age. In addition, Frequent Worriers did not show a propensity toward becoming an individual crusading for social change: they were not considered by teachers to be especially gifted in social interaction or leadership ability. Furthermore, the school environment did not appear to be a major source of their anti-nuclear beliefs. No differences in preference for school subjects that might raise their level of nuclear awareness (e.g., religious studies, social sciences) were found between the Frequent Worry Group and the matched control group.

Therefore, a review of the general profile of the Frequent Worrier produces a clearer picture of this individual, but not one that points to obvious characteristics that might explain why he or she experiences unusual fear over the nuclear threat. Seeking the significant ingredients that might "sensitize" an individual to the nuclear threat will be pursued later in this discussion. However, psychological measures applied to Frequent

Worriers did provide data that were instrumental to determining the effects of adolescent rumination over the nuclear threat. The following discussion deals with this data.

Psychogenic Disorder, or Empowerment Hypothesis?

Based on the data obtained from this research, the adolescent who claims to experience frequent preoccupation, worry, and fear over the nuclear threat does *not* appear to be psychologically at risk. The generalized state of anxiety (trait anxiety) as measured by the STAI suggests that they, on average, feel no greater anxiety over living in today's world than other adolescents their age. Furthermore, the Frequent Worriers did not show greater incidence of stress symptoms than a control group matched for age and gender. They did not appear to have "foreclosed" on their future aspirations: the majority saw their present schooling as instrumental to their future and planned on attending college or university. Contrary to results reported by Beardslee and Mack (1982) and Lewis et al. (1989), the students' answers to open-ended questions suggested no overwhelming dread for the future. When asked where they would visit if they could travel through time, Frequent Worriers expressed as much curiosity and interest in the future as in the past. In only three cases were references made to the past that were touched with a sense of finding security in the past or escape from contemporary problems.

A surprizing number of Frequent Worriers demonstrated moderate-high to high self esteem (as measured by the CSEI): 34% of the sample scored above the 75th percentile. Their spontaneous list of hopes and worries about the future (from the CCCAF survey, phase 3) suggested that they were more concerned about global, non-materialistic problems than the matched control group. This sense of global consciousness with strong undertones of humanitarianism also appeared when they were asked to list the top political platforms they would pursue as "Prime Minister."

The apparent "global sensitivity" of Frequent Worriers toward the plight of others could possibly offer one explanation as to why they consider the nuclear threat to be a major issue (more important than AIDS, Divorce, Acid Rain, Free Trade, etc). Nuclear War may be perceived by these individuals to be an event that would inflict great suffering instantly, and throughout the world. Indeed, when asked to describe the aspects of nuclear war they found most fearful, the most common answer described the massiveness of suffering that would be inflicted on all living things.

By scoring consistently high on the PIL (as compared to controls) Frequent Worriers indicated that they share more conclusive thoughts over questions that deal with their "meaning in life." In addition, their consistently high scores on the N-SLC scale (save two moderate outliers) suggest that they are more likely to want to take control of their lives and effect change on the environment rather than rely on the presence of outside forces such as fate or significant others. Not surprisingly, a major theme that appeared in their description of their fear of the nuclear threat was the sense of feeling personally powerless in controlling political actions that put the whole world at risk.

Therefore, the data obtained from this research provides no support for the medical model hypothesis claiming that adolescents who frequently worry over the nuclear threat are at risk for psychological disorders. It must be stressed, however, that these results apply on a short-term basis only. Long term effects of living with the nuclear threat can only be decisively addressed with longitudinal research.

Proponents for the Empowerment Hypothesis will find the results provided by the research disappointing as well. Qualitative analyses of responses given to open-ended questions do not provide a consistent picture of a young individual positively coping with the nuclear threat. When directly asked to describe the coping methods they employed when experiencing fear from the nuclear threat, 62% of the Frequent Worriers reported using passive and/or escapist behavioral defences. The most dominant method consisted of simply pushing thoughts of the threat out of their minds (Cognitive Avoidance). If this avoidance technique failed in relieving anxiety, it was supplemented by techniques that involved "giving in" to the threats' existence and trying to live with it (Resigned Acceptance), distracting oneself with other activities (Alternative Rewards), or the transformation of fear into anger directed toward others (Emotional Discharge). All the preceding methods of coping fall under the classification of avoidance responses and are considered to be not only maladaptive but likely to lead to *greater* distress and/or depression (Ebata & Moos, 1989). On the other hand, a greater sense of well being is said to evolve in individuals who use more active, or approach methods when dealing with their stress. The major coping methods that foster well being are considered to be: sharing feelings and thoughts with significant others (Guidance/Support) and choosing a decisive course of action (Problem Solving). Only 7 of the 36 coping statements reported by the Frequent Worry group involved seeking Guidance/Support. No students had used Problem Solving as a coping method. The only other approach method that appeared in the protocols of Frequent Worriers consisted of attempts to "think" their way through the nuclear problem. This method appeared in 19% of their coping statements, but as noted by Ebata & Moos (1989), this technique is considered to be relatively ineffective in lowering feelings of distress because it often degenerates into rationalization and intellectualization (Logical Analysis) and avoids clear confrontation of the anxiety surrounding the stress. Therefore it appears, in general, that the Frequent Worriers employed poor coping methods when dealing with their fear. They were most likely to simply push these negative thoughts out of their minds. Still, all may not be lost. Ebata and Moos (1989) suggested that, on occasion, the use of cognitive avoidance as a coping method may be helpful; cognitive avoidance can provide momentary relief from anxious thoughts and subsequently open paths toward more active and adaptive coping strategies:

> Cognitive avoidant coping may reduce anxiety and allow for a gradual recognition of threat so that the problem does not become overwhelming and crippling. It can also lead to the maintenance of hope and a sense of

> mastery over unpleasant emotions. But the danger of avoidance coping is that it may prevent or interfere with appropriate adaptive action. Even in the face of uncontrollable events, the reduction of anxiety by avoidance may not be productive if it prevents psychological resolution of the problem (p. 18)

Therefore, it is highly debatable whether Frequent Worriers show the effects of being "empowered" by their openness with their nuclear fear (cf., Macy, 1982). On the other hand, although 70% of the Frequent Worriers indicated great distrust and disrespect for politicians in general, an equal portion of the sample expressed support for the political system and belief in the importance of the average voting citizen. A tendency toward becoming actively involved in changing the current nuclear situation also appeared in the majority of Frequent Worriers who reported that their nuclear fear was more likely to facilitate rather than debilitate personal action.

Frequent Worriers indicated that they had very clear mental images of the scene following a nuclear attack. Some theorists claim that the vividness of such mental images play a major role in keeping a thought or concept salient in an individual's thinking (see Nisbett & Ross, 1980). This vividness of the Frequent Worriers' mental image may therefore play a large role in explaining why they appear sensitive to the threat of nuclear war. There is no doubt that their ability to visualize a nuclear strike plays a major role in raising their anxiety levels. Induced-State Anxiety scores (nuclear fear) obtained from the Frequent Worry group were above the 96th percentile when compared to published norms. In contrast, the control group's average Induced-State score, although inflated as well, was only at the 60th percentile level. Still, some anti-nuclear writers believe that maintaining a clear mental picture of the after effects of a nuclear strike is instrumental to "empowering" an individual toward anti-nuclear activism (Caldicott, 1978; Macy, 1982).

Drawing tentative conclusions from the descriptive profile

One underlying question that has remained throughout this preceding discussion has been: "Why are Frequent Worriers the way they are?" The data collected so far indicates that none of the obvious socializing agents (family, media, school) play a consistent role in manipulating the perceptions of these adolescents. It is the opinion of the author that claiming Frequent Worriers to be mere products of socializing factors is far too simplistic. They do not appear to be automated clones of significant others, blindly repeating the political and social views that have captured the attention of "social radicals." Many more individualistic, *psychological* factors appear to play significant roles in sensitizing a young person to the nuclear threat. The research of this thesis suggests the existence of at least five factors.

As measured by the PIL test, Frequent Worriers, in general, are clearly not living in a state of "existential vacuum" (Crumbaugh & Maholick, 1977). Rather, they appear to have a clearly defined sense of meaning in life. They appear to have considered some deep existential questions concerning their values, beliefs, and goals in life - especially for individuals their age. Theorists would therefore suggest that Frequent Worriers should cope better with life's problems, have higher self esteem, and be generally more satisfied with their life (Crumbaugh, 1968). (Evidence from this study generally supports the speculation that those with high PIL scores also demonstrate higher self esteem [see next section]. In addition, the researcher found students who were interviewed to be generally happy, "normal" students. Analyzing the effectiveness of their everyday coping was beyond the scope of this research, however indicators such as Trait Anxiety scores did not suggest that these individuals were struggling with their everyday life). Still, when it comes to being "sensitized" to certain sociopolitical issues, those with higher levels of "meaning in life" could feel accosted by external forces that threaten their sense of purpose and definition. Having a clearer "purpose in life" is, therefore, a possible fundamental factor that distinguishes an individual who is sensitive to the nuclear threat.

Combined with four other psychological factors the portrait of the adolescent who expresses frequent worry over the nuclear threat emerges: an individual who has a strong tendency toward an internal locus of control, idealized views of how politicians and the political system should operate, the ability to visualize vivid mental images, and a clear concern for global, humanitarian issues.

Still, it is justifiable to ask: "why the *nuclear* threat....why not other global concerns such as pollution? or AIDS?" This question is much more difficult to answer and is open to speculation. Some recent writers have noted that a major stress for the children of today deals with confronting the impersonal quality of life in a highly technological world (Schwebel, 1986; Tizard, 1989). Based on five years of research and the results of this thesis, the author proposes that, of all technological innovations, the ability to conduct nuclear war represents, to many young people, the epitome of technological knowledge gone mad. In comparison, a threat such as the AIDS epidemic can easily be attributed to fate. AIDS is a terrible *externally* imposed threat that no human could predict or control. Although it is terribly frightening, we are seen as it's victims, not it's perpetrators. From a different perspective, the growing concern over pollution throughout the world is seen to be more insidious and hidden. The problem of pollution has been growing with us for years, and, in contrast to AIDS, is a direct result of our negligence. In addition, pollution is easily regarded as a result of our *accidental* negligence. After all, few of us want to consider the possibility that the industrial community would purposely destroy our environment. If anything, pollution is depicted as "industrial *error* ;" it is a product of an over zealous interest in progress, and did not result from the intent to destroy. Indeed, many students who were interviewed mentioned that pollution was a problem, but optimistically indicated that "technology created this problem...and would solve it."

In comparison, the threat of nuclear war is unique to human history. It represents the height of technological destruction. More importantly, it was *designed* for destruction. Therefore, students who are "sensitized" to a heightened global awareness due to their existential awareness, internalized tendencies, idealism and ability to visualize in vivid detail simply fear nuclear war the most because the see it for what it truly is: technology designed to intimidate, to create fear, and, ultimately, to destroy everything in its path.

Inferential analyses: correlations between isolated variables

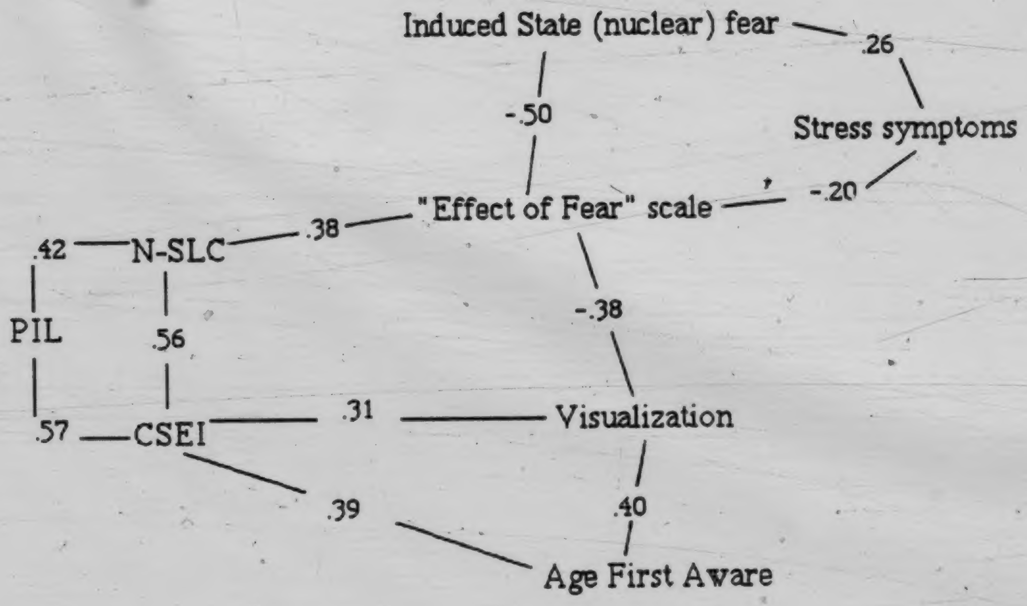
A number of variables used to describe and assess the Frequent Worrier lend themselves to more inferential analyses than the descriptive data reported above. The reader is reminded that the following analyses are speculative in nature, due to the small size of the sample and the lack of reliability and validity data for some of the measures created specifically for this research. Figure 2 provides the reader with a schematic diagram proposed to act as a guide in comparing the relationships between various variables.

The Locus of Control, Meaning in Life, and Self Esteem Triad.

To eliminate confusion in reporting data, the direction of N-SLC scores has been reversed so that positive correlations between other variables and N-SLC scores indicate an increased tendency toward internalized locus of control (usually lower N-SLC scores suggest internalization). As can be seen in Figure 2, moderate and stable correlations exist between the measures of Self Esteem, Meaning in Life and Internalized Locus of Control scores in the Frequent Worry Group. These trends in the scores support predictions made by all three instruments and validate the accuracy of their measurement. It is impossible, if not unnecessary, to determine from these results which psychological construct plays the largest role in the triad. Judging by the correlations, Purpose in Life and Self Esteem appear to share the strongest interrelations and so one could speculate that a sense of internalized potential to evoke change on the environment results.

Figure 2

Correlations between specific measures administered to Frequent Worriers, Phase 3


Induced State (nuclear) fear
.26
Stress symptoms
-.50
-.20
"Effect of Fear" scale
.38
.42
N-SLC
PIL
.56
-.38
.57
CSEI
.31
Visualization
.39
.40
Age First Aware

NOTE

All numbers indicate Pearson Product-Moment Correlation Coefficients.

Specific measures represented:
Purpose in Life Test (PIL), Nowicki-Strickland Locus of Control Scale (N-SLC), Coopersmith Self Esteem Inventory (CSEI), "Age first aware of the nuclear threat," "Visualization of a nuclear strike," "Effect of fear" scale, Induced-State (nuclear fear) anxiety, and reported incidence of stress symptoms.

One would expect this tendency toward internalization to coincide with a tendency toward activist inclinations. This appears to be the case in this sample of Frequent Worriers. As indicated in Figure 2, increased internalization is positively correlated nuclear fear acting in a facilitative manner (r=.38). From this perspective, being able to define one's meaning in life could be considered a core ingredient of healthy self esteem and that, in turn, is considered important to the individual developing a sense of self-efficacy and activism.

Other correlations: nuclear measures.

Figure 2 also indicates that relationships exist between the quantitative measures especially devised in this study to assess certain aspects of adolescents' nuclear experience. Working from the bottom of the diagram and in an upward direction, a mild positive correlation (r=.39) suggest that the older an adolescent was when he/she became aware of the nuclear threat, the higher his or her self esteem. This is not to imply that self esteem is a function of when children become aware of the nuclear threat in particular, but the results do suggest that children who became aware of the nuclear threat latter in life also have higher levels of self esteem. This observation supports the speculation of some psychologists that a child is best prepared to deal with the pressures of living in today's world by *delaying* their introduction to frightening issues until age-appropriate times (e.g., Elkind, 1988).

Interestingly, the students' ability to visualize nuclear strike appears to be related to the age at which they first became aware of the threat, but not in the manner that one might expect. It makes intuitive sense to speculate that the younger an individual is when they first become aware of the nuclear threat, the greater time they have to embellish and develop their mental schema. However, correlations in Figure 3 clearly suggest that the *older* the adolescents were when they first became aware of the threat, the more clearly defined their internal image. A pattern in the data such as this falls neatly into a cognitive developmental perspective. The ability to imagine a global nuclear holocaust is a highly abstract concept that is best managed by those who have attained some proficiency in formal operative thinking (Piaget, 1972). Therefore, the trends in Figure 2 may suggest that the younger the individuals were when they became aware of the nuclear threat, the more they would rely on concrete, simplified images of destruction.

The ability to visualize a nuclear scenario also appears to play a significant role in resulting behavior, but not in the manner predicted by some social psychologists. Fiske et al. (1983) suggested that vivid mental images of the nuclear threat would not only make the issue more salient in the minds of individuals, but would also play a major facilitative role in the individual adopting an active protest position vis à vis the threat. In Figure 2 visualization ability is *negatively* correlated with the facilitative effects of nuclear fear, thus suggesting that those with clearer mental images of a nuclear attack were less likely to claim that their fear facilitated interest in anti-nuclear action (r=-.38). Indeed, further correlations suggest that individuals who reported feeling debilitated by their fear of the nuclear threat (the lower end of the "Effect of Fear" scale) where more likely to score higher on the Induced-State (nuclear fear) scale and the Stress Symptoms scale (correlations were -.50 and -.20, respectively).

We are left with a dilemma. Throughout the preceding discussion an image of the Frequent Worrier has emerged of an "average" adolescent from an "average" home who appears to be particularly sensitive to the nuclear threat due to some refined qualities of his or her personality. Locatelli and Holt (1986) suggested that this sensitive awareness of the threat could come at a high cost to mental health. However, the current research results seem to deny the existence of any significant stress or depression symptoms in Frequent Worriers. Also, anti-nuclear activists, who are considered most "sensitized" to the issue, are viewed as coping most effectively with their anxiety (Hamilton et al., 1986; McGraw & Tyler, 1986; Locatelli & Holt, 1986). True enough, the "sensitized" adolescents studied in this thesis demonstrated a tendency toward adopting anti-nuclear activity (indicated by the general report that their fear of the threat would act in a facilitative rather than debilitative manner). However, not *one* individual had used an active, problem-solving approach to coping with their fear. Neither had any of the interviewed adolescents participated in anti-nuclear activities. In addition, the majority of these individuals demonstrated a refined ability to visualize a nuclear attack and this ability was correlated with maladaptive fear and stress responses. Does this means that Frequent Worriers, even if showing a propensity toward activism, are likely to succumb to despair and defeatism? As discussed in the following section, recent theoretical speculation suggests there is still hope for the Frequent Worrier who maintains a sense of personal efficacy.

Inspiring activism in the face of the nuclear threat.

Some researchers and theorists claim that an individual's sense of personal and political efficacy plays a major role in whether the individual adopts an adaptive "approach" method of coping with the nuclear threat or a maladaptive "avoidance" method of coping (Haste, 1989; Lewis, 1986b). The data produced by this thesis supports some of the more detailed theoretical speculation proposed by Haste (1989). According to Haste, changes in perception of personal efficacy should interact significantly with visualization ability to produce a range of resulting behaviors. Put succinctly, those visualizers who have a higher sense of personal efficacy will tend toward adopting preventive or "protest" action. On the other hand, visualizers who are low in personal efficacy will tend to experience feelings of despair, defeatism and/or escapism ("live for today"). In this sense, Haste accepts the psychological view that the ability to visualize a stress has a facilitative effect on positively coping with the stress (cf., Fiske et al., 1983). Still, this may be an out-dated application of a "pre-nuclear" concept to the nuclear issue.

As the data in Figure 2 indicates, the individual who can actually visualize a nuclear attack may be overwhelmed by their own image and in so doing debilitate their propensity toward activism. Perhaps the most important aspect of Haste's model is not the role played by visualization ability, but the role played by "personal efficacy." This latter construct is most similar with the sense of internalized control described in the research presented in this thesis. The role of internalized control in coping with the nuclear threat is especially important considering another relationship indicated in Figure 2: it appears that the more an individual is internalized the more they appear to be facilitated toward adopting an approach (active) stance toward the nuclear threat. This latter trend in the data may suggest that the Frequent Worriers' tendency toward being internalized could counteract the negative effects of their "over active" nuclear imagination (i.e., their ability to visualize a nuclear attack). The activist model proposed by Haste suggests that the Frequent Worriers studied in this thesis may be in a healthy psychological state to cope with their apparent sensitivity to the nuclear issue. The majority of Frequent Worriers are high in personal efficacy (as indicated by the N-SLC) and visualize well (as indicted by self-report visualization scores and subsequent high scores on the Induced-State Anxiety scores). According to Haste, a combination of these two psychological traits should *not* result in a sense of general despair. This appears to be the case for the Frequent Worriers studied in this thesis: they demonstrated a strong resolve in their beliefs, values, and purpose in life (as indicated by high PIL scores). Furthermore, Haste's prediction that increased personal efficacy and visualization ability should lead to more preventive action is supported by the finding that Frequent Worriers show a propensity toward taking an active stance when they experience their fear over the nuclear threat (as measured by the Effect of Fear scale).

The findings of Thearle and Weinreich-Haste (1986) also support a positive interpretation of Frequent Worriers' coping abilities. The researchers studied the relationship between the expression of affect and the likelihood of action in adolescents concerned over the nuclear threat. They found that students who expressed fear over the threat were more likely to to act if they scored high on "protest potential." According to psychologists, "protest potential" consists of a high sense political efficacy that interacts with a low trust in government (Locatelli & Holt, 1986; McGraw & Tyler, 1986). As can be recalled from the content analyses of responses to interview questions, Frequent Worriers fit neatly into both of these descriptions. In fact, the degree to which Frequent Worriers expressed distrust and anger over politicians and general political bureaucracy while still maintaining a belief in the importance of the individual voter was remarkable.

Therefore, a distinction should be made between the psychological constructs of nuclear *worry* and nuclear *despair* (cf., Diamond and Bachman, 1986). Adolescents who claim to experience frequent worry over the nuclear threat are not necessarily despairing over their current state. Supported by the findings of this research, the speculation of recent theorists suggest that these individuals may be predisposed to become politically active when coping with their nuclear concerns.

The unfortunate fact still remains that showing a propensity toward protest and actually becoming involved in protest are two distinct things. Unfortunately, the social psychological literature is full of research studying why cognitions and feelings *rarely* evoke reliably supportive behaviors (Fiske & Taylor, 1984). Therefore, the possibility still exists that the Frequent Worriers studied in this research may fail to evolve into active, effective members of society. This could be due to a number of factors. First, feeling a low sense of trust for government and politicians can be a double-edged sword. Although, as noted above, it appears to be a key ingredient in activating political protest, it could just as well lead to frustration with the system and subsequent relinquishing of responsibility. This may be especially true for young adolescents who have a naive or idealistic view of how political systems should operate. Second, the consensus of social psychological research is that fewer people from the lower socioeconomic status actually become involved in "mainstream" political participation (Marsh, 1977; Milbrath & Goel, 1977). Considering the fact that the lower economic class appears to be over-represented in the current research, the odds are against the Frequent Worrier pursuing his or her tendency toward political activism to completion.

Finally, it is clear from the psychological literature dealing with activism that important patterns of response (schemas) are necessary to promote effective coping with the nuclear threat. The two major adaptive schemas appear to be a nuclear war-prevention schema and an effective coping schema (Haste, 1989). The Frequent Worriers studied in this research demonstrated neither of these behavioral responses. The implication of this research finding will be discussed below. Beyond these specific concerns, and at a fundamental level, no adolescent can feel politically efficacious in a society that tends to belittle their concerns and anxiety. Implications surrounding these latter observations will also be discussed in the following section.

Concluding Remarks: Implications of the research

The data provided from this research suggests that although a specific group of adolescents (Frequent Worriers) is highly sensitive to, and consciously fearful of the threat of nuclear war, they are neither greatly distressed nor despondent due to this nuclear awareness. However, it is also clear from the data that this group of teenagers lack defined schemas in how a nuclear war can be prevented, and how they should effectively cope with their fear. This latter finding has implications on the field of education, especially relative to the recent development of peace education curricula. In addition, the research suggests that adolescents must feel personally and politically efficacious in order to face the threat of nuclear war. This finding implies that teenagers must feel they can play an effective role in society. In order to receive this respect, the author believes that the concerns and anxieties of youth need to be perceived within an updated model of adolescent theory. This section consists of an exploration of these two implications.

Peace Education.

Peace education is a relatively new addition to the standard educational model that emphasizes the attainment of academic skills. Although it can appear in various forms that extend from religious studies to mathematics, peace education curricula usually appears in social studies courses. From a global perspective, the goal of peace education is to provide students with the necessary skills to become effective, or "participatory" citizens (Carson, 1985). In order to reach this goal, students are instructed in certain "peace skills" such as problem solving, critical thinking, and non-violent conflict resolution (Vriens, 1987). In addition, students are introduced to certain values, attitudes, and knowledge that increase their understanding of war and peace. Educators hope that these efforts will produce well-informed, confident, and determined young people who are more self-reliant and politically aware. Unfortunately, modern peace education evolved from the political cold war tensions that existed in the mid 1980s. As a result, it has maintained a rather reactive posture, becoming most popular when nuclear issues dominate the headlines (Carson, 1985). The research results from this thesis clearly suggest that peace education has a significant *proactive* role to play in the lives of today's youth.

Frequent Worriers, those students who are most sensitive to the nuclear threat clearly lack the schemas of strategies associated with prevention of war (nuclear or otherwise). They appear to be unaware about how citizens can promote peace, protest against weapons, foster contact and reconciliation, and redefine international boundaries. Furthermore, Frequent Worriers demonstrate inadequate coping mechanisms. They appear unsure over whether their fear is excessive or appropriate. They do not appear to have questioned the value and effectiveness of defence mechanisms such as denial and/or emotional withdrawal. Neither do Frequent Worriers challenge the apparent usefulness of living for the present or presenting a macho façade of fearlessness. The saddest fact is that none of the Frequent Worriers had engaged in useful action to deal with their fears.

The data obtained from Frequent Worriers also indicate a disturbing trend in adolescent perception of the political system: although it has the potential to work, the individuals who run the system deserve neither their trust nor respect. As noted by Carson (1985, p.8):

> Alienation and a loss of hope are then real possibilities which have important implications for a social education which is traditionally based upon optimistic assumptions about the powers of individuals to affect the direction of the society. It is the potential of peace education to address this aspect of growing up in our uncertain world.

Theories of Adolescent anxiety.

In his analysis of anxiety, May (1977) suggested that the explosion of the first nuclear weapon marked the pivotal point of transition from the "age of reason" to the "age of anxiety." We now not only fear war, poverty, overpopulation, and AIDS, but we fear the fear itself. However, as indicated in the comments that began this thesis, prenuclear conceptions of adolescent anxiety continue to dominate the psychological literature. A casual perusal of contemporary textbooks on adolescence leads one to believe that the only anxiety experienced by teenagers is anxiety that stems from sexual maturation and/or school achievement (e.g., Adams & Gullotta, 1989; Santrock, 1990).

Although children are undoubtedly experiencing anxiety over such things as biological changes, the theories of Piaget and Kohlberg clearly suggest that changes in thinking and reasoning provide the adolescent with the unenviable ability to suffer the emotional angst over much more abstract, existential dilemmas:

> Just as children begin to think scientifically by constructing theories about the physical world and testing them, they begin during this formal operational period of adolescence to coordinate completely their feelings about others, themselves, institutions, and the world in general in terms of a system of values that is the moral and emotional equivalent to the construction of theories about the physical world (Hesse & Cicchetti, 1982, p. 18)

The development of Piaget's view of formal operational thinking implies that considerable change also occurs in emotional development. Adolescents develop strong ideological feelings with respect to social and ideal realities such as freedom, social justice and neutrality. These feelings have considerable impact on the adolescent's sense of personality formation. Similarly, Erikson's (1950) Ego-centered view of psychology suggests the existence of progressive, distinct stages of Ego development. The existence of these stages imply the existence of universal, distinct sets of *emotion* that characterize each stage of development. These changes in emotion, in turn, alter the quality of anxiety experienced by adolescents. Still, in most textbooks, adolescents only worry over sex and school.

Psychological writers have recently discussed the need to create a "new" developmental domain: one of adopting a Global View. According to Solantus (1989), the Global View consists primarily of sensing oneself to be a member of a global community and is a product of the recent developments in the mass media. The act of adopting a Global View is especially relevant to the period of identity formation in adolescence. Solantus believes that children with a collectively-based identity can better withstand the anxiety and pressures of living in a nuclear world. The research from this thesis appears to support Solantus' claim. Adolescents with a global perspective are, in the very least, more realistic in their assessment of world conditions and show a propensity toward taking part in sociopolitical change.

However, the data also suggest that the existential, anxiety-based ramifications of developing a Global View could drift toward two diametrically opposed outcomes. The most optimistic prediction is that adolescents would feel inclined to actively confront the sources of their anxiety. This trend appeared in some of the Frequent Worriers studied in this thesis. However, it should be recalled that Frequent Worriers only represent a small portion of the adolescent population. Unfortunately, the much larger group of adolescents appear to be drifting toward the opposite extreme: one of withdrawal from social and political concern. This latter trend was noted in the past by Gillespie and Allport (1955). It was observed again by Bachman et al. (1984). Currently, the results of this thesis suggest that students who do not claim to experience fear over the nuclear threat (the majority of the sample) show a clear trend toward defeatism and the subsequent development of a materialistic, self-centered, and privatistic perspective.

There is no doubt that psychologists can help in reversing the disturbing trend toward pessimism and defeatism in adolescence. A significant initial step would be to alter the ageistic bias in adolescent theory that belittles their experience of anxiety. Adolescent concerns over issues such as sexuality and school deserve professional attention, but so do the more global adolescent concerns that alter their sense existential safety and optimism. It is time the adolescent predicament be reconsidered in a nuclear world.

The final chapter of this thesis began by summarizing the psychosocial profile of the Edmonton sample of "Frequent Worriers." Next, the issue of whether the Psychogenic disorder hypothesis or Empowerment hypothesis best describes the experience of the Frequent Worrier was addressed. Data was then presented that allowed for a speculative analysis of possible interrelations between major variables. Finally, the implications of the research findings were considered in the light of recent theorizing on social efficacy and activism. The thesis concluded with comments on the implications of the research in the fields of education and psychology.

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VII. APPENDICES

Appendix A:
The Canadian Children's Concerns about the Future Survey, 1989.

Appendix B:
Interview Format, Phase 3.

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Appendix A:
The Canadian Children's Concerns about the Future Survey, 1989.

The Canadian Children's Concerns about the Future Survey

1989

University of Alberta
Edmonton
Canada T6G 2G5

Department of Educational Psychology
Faculty of Education
6-102 Education North, Telephone (403) 432-5245

March, 1989.

TO THE STUDENT:

As we reach the end of the 1980's many scientists are extremely interested in discovering what it is like to be a young person in today's world. In this questionnaire we are interested in finding out how you feel about some current concerns. We're also interested in how you view the future.

In order to get an accurate picture we would like you to answer this questionnaire honestly and thoughtfully. Because the questionnaire touches on some personal concerns we want to assure you that the information you give will only be seen by the staff of the research project. On page 10 we ask you some background information. This will allow us to find out whether students in different grades, boys and girls, those with different backgrounds, etc., have different concerns or feel differently about their experiences.

Please note that each survey form is "coded" with a special combination of letters and numbers. In the very near future, a researcher may contact you to see if you would volunteer to discuss the survey and some of its topics in more detail. This "interview" would be very casual and take not much longer than an hour.

Your participation throughout this project is voluntary. We hope that you will participate. Hopefully you will find it interesting and thought-provoking. If you choose not to participate or withdraw at any point this will not in any way affect your standing or activities at school. If you have any questions about the study, please feel free to contact the person named below.

We appreciate the time and effort you will give to this project. It will give us a better understanding of your needs in the important task of facing tomorrow's world.

Sincerely,

R. Christopher B. Lewis, M.Ed., Ph.D.(Cand.)
University of Alberta.
PHONE: 439-5245.

☐☐☐☐

☐

I. When you think of your life and future what three things do you hope for most?

______________________________ ☐☐ 1

______________________________ ☐☐ 2

______________________________ ☐☐ 3

II. And what three things do you worry about the most?

______________________________ ☐☐ 4

______________________________ ☐☐ 5

______________________________ ☐☐ 6

III. Here are some things others list as hopes. Circle the number that best describes how important each one is to you.

	Not Important at all	Somewhat Important	Important	Very Important	
1. Good grades	1	2	3	4	☐ 7
2. A good marriage	1	2	3	4	☐ 8
3. Good friends	1	2	3	4	☐ 9
4. Good health	1	2	3	4	☐ 10
5. A good job	1	2	3	4	☐ 11
6. An unpolluted environment	1	2	3	4	☐ 12
7. World peace	1	2	3	4	☐ 13
8. Children	1	2	3	4	☐ 14
9. Happiness and fulfillment	1	2	3	4	☐ 15

IV. Here are some things others list as worries. Circle the number that best describes how important each one is to you.

1. Violent crime	1	2	3	4	☐ 16
2. My own death	1	2	3	4	☐ 17
3. Bad grades	1	2	3	4	☐ 18
4. Lack of jobs	1	2	3	4	☐ 19
5. My parents' death	1	2	3	4	☐ 20
6. Nuclear war	1	2	3	4	☐ 21
7. Parents' divorce	1	2	3	4	☐ 22
8. Poverty	1	2	3	4	☐ 23
9. Nuclear power plant leaks	1	2	3	4	☐ 24

In the next section we ask what you are doing about some worries. There are no right or wrong answers. We are interested in your experiences and thoughts.

V. Concerns about high unemployment rates

Circle the number that best describes your experience

		Not at all	A few times	Once or twice/week	Almost every day	
1.	In the last month how often have you thought about high unemployment?	1	2	3	4	☐ 25
2.	In the last month how often have you talked about high unemployment					
	a. at home	1	2	3	4	☐ 26
	b. at school	1	2	3	4	☐ 27
	c. with your friends	1	2	3	4	☐ 28
3.	In the last month how often have thoughts about high unemployment given you feelings of fear and anxiety?	1	2	3	4	☐ 29
4.	In the last month have you had any bad dreams about high unemployment?	1	2	3	4	☐ 30
5.	How much have you learned about unemployment conditions from the following:					
		Nothing	A bit	A fair amount	A lot	
	a. Teachers or school	1	2	3	4	☐ 31
	b. Newspapers and magazines	1	2	3	4	☐ 32
	c. Books	1	2	3	4	☐ 33
	d. Television	1	2	3	4	☐ 34
	e. Family	1	2	3	4	☐ 35
	f. Friends	1	2	3	4	☐ 36
		None	A little	A lot	Total control	
6.	How much influence do you feel that you personally can have in changing employment conditions?	1	2	3	4	☐ [illegible]

	None	A little	A lot	Total control	
7. How much influence do you think your parents can have in changing employment conditions?	1	2	3	4	☐ 38
8. How much influence do you feel the Canadian government can have in changing employment conditions?	1	2	3	4	☐ 39

VI. Concerns about job and career plans

Circle the number that best describes your experience.

	Not at all	A few times	Once or twice/week	Almost every day	
1. In the last month, how often have you thought about job and career plans?	1	2	3	4	☐ 40
2. In the last month, how often have you talked about job and career plans?					
a. at home	1	2	3	4	☐ 41
b. at school	1	2	3	4	☐ 42
c. with friends	1	2	3	4	☐ 43
3. In the last month, how often have job and career plans given you feelings of fear or anxiety?	1	2	3	4	☐ 44
4. In the last month, have you had any bad dreams related to job and career plans?	1	2	3	4	☐ 45

5. How much have you learned about job and career possibilities from each of the following:

	Nothing	A bit	A fair amount	A lot	
a. Teachers or school	1	2	3	4	☐ 46
b. Newspapers and magazines	1	2	3	4	☐ 47
c. Books	1	2	3	4	☐ 48
d. Television	1	2	3	4	☐ 49
e. Family	1	2	3	4	☐ 50
f. Friends	1	2	3	4	☐ 51

	None	A little	A lot	Total control	
6. How much influence do you feel you personally have in making your job or career plans work out?	1	2	3	4	☐ 5
7. How much influence do you think your parents can have in making your job and career plans work out?	1	2	3	4	☐ 5
8. How much influence do teachers and schools have in making your career plans work out?	1	2	3	4	☐ 5

VII. Concerns about the threat of nuclear war
Circle the number that best describes your experience

	Not at all	A few times	Once or twice/week	Almost every day	
1. In the last month how often have you thought about the threat of nuclear war?	1	2	3	4	☐ 5
2. In the last month how often have you talked about the threat of nuclear war?					
a. at home	1	2	3	4	☐ 5
b. at school	1	2	3	4	☐ 5
c. with friends	1	2	3	4	☐ 5
3. In the last month how often have thoughts about the threat of nuclear war given you feelings of fear or anxiety?	1	2	3	4	☐ 5
4. In the last month have you had any bad dreams about nuclear war?	1	2	3	4	☐ 6

	Not at all	Very little	Some	A lot	
5. Thinking about the threat of nuclear war has affected my plans for the future __	1	2	3	4	☐ 61
6. Thinking about the threat of nuclear war makes me wonder if I really want to get married and have children some day	1	2	3	4	☐ 6
7. Thinking about the threat of nuclear war makes me want to live only for today and forget about the future __	1	2	3	4	☐ 6

	Nothing	A bit	A fair amount	A lot	☐☐☐☐
8. How much have you learned about the threat of nuclear war from each of the following:					☐
a. Teachers	1	2	3	4	☐ 64
b. Newspapers & magazines	1	2	3	4	☐ 65
c. Books	1	2	3	4	☐ 66
d. Television	1	2	3	4	☐ 67
e. Family	1	2	3	4	☐ 68
f. Friends	1	2	3	4	☐ 69

	None	A little	A lot	Total Control	
9. How much influence do you feel that you personally can have in preventing nuclear war?	1	2	3	4	☐ 70
10. How much influence do you feel your parents can have in preventing nuclear war?	1	2	3	4	☐ 71
11. How much influence do you feel Canada as a nation can have in preventing nuclear war?	1	2	3	4	☐ 72

	Yes	No	
12. Have you taken any actions to prevent nuclear war?	1	2	☐ 73
13. Have your parents taken any actions to prevent nuclear war:	1	2	☐ 74

14. Below are some of the suggestions that have been made about what Canada can do to prevent nuclear war. Do you think the following will help prevent nuclear war?

	Yes	No	Undecided	
a. Supporting a nuclear freeze	1	2	9	☐ 75
b. The West having more nuclear weapons than the Soviets	1	2	9	☐ 76
c. Testing the ~~cruise~~ missile	1	2	9	☐ 77
d. Refusing to test the cruise missile	1	2	9	☐ 78
e. Refusing to manufacture nuclear weapons	1	2	9	☐ 79
f. Do our share of manufacturing nuclear weapons	1	2	9	☐ 80
g. Make Canada a nuclear weapon free zone	1	2	9	☐ 81
h. Withdraw from NATO	1	2	9	☐ 82
i. Support NATO	1	2	9	☐ 83

j. Other suggestions you have ______________________________

____

VIII. General

1. Are you aware of what the Government is doing to prevent war of any kind?

Yes	No	Undecided
1	2	3

☐ 84
27

In your view, what else should the Government be doing in this regard?

____

2. Are you aware that Canada is at the disarmament negotiating table in Stockholm, Vienna, Geneva and New York?

Yes	No
1	2

☐ 85
28

3. In your view, what is the most important reason why Canada has been at peace for forty years? (circle one)

   (a) Geography

   (b) Membership in NATO

   (c) Peaceful Nature of Canadians

   (d) No External Threat

   (e) Other (please specify) ____________________

☐ 86
29

4. What do you think is the most important way we can reduce the threat of nuclear war? (circle one)

   (a) Arms Control Negotiations

   (b) Unilateral Disarmament

   (c) People-to-People Exchanges

   (d) Bilateral Disarmament

   (e) Other

☐ 87
30

5. Are you concerned about other forms of warfare?

Yes	No
1	2

☐ 31 88

If so, which? (circle one only)

(a) Conventional Warfare

☐ 32 89

(b) Chemical Warfare

(c) Other (please specify) ____________________

6. What do you feel is the likelihood of nuclear war occurring in your lifetime?

Very Low	Low	Moderate	High	Very High
1	2	3	4	5

☐ 33 90

7. Who do you think is responsible for whatever risk of nuclear war exists today?

USA	USSR	Both USA & USSR	Canada	Other (specify)
1	2	3	4	5

☐ 34 91

8. Would you expect children in the United States to hold the same views of these issues as you do?

Yes	No
1	2

☐ 35 92

9. Would you expect children in the Soviet Union to hold the same views on these issues as you do?

Yes	No
1	2

☐ 36 93

10. Do you think you would survive a nuclear war?

Yes	No
1	2

☐ 37 94

11. Would you want to survive a nuclear war?

Yes	No
1	2

☐ 38 95

12. In your view, is there a greater risk of you being affected by a nuclear war or a non-nuclear war?

Nuclear	Non-Nuclear		
1	2	☐ 39	96

IX. General

1. In the last year have you seen anyone at school for advice or counselling about any of the following:

	Yes	No		
a. choosing courses	1	2	☐ 40	97
b. problems with a class	1	2	☐ 41	98
c. problems with a teacher	1	2	☐ 42	99
d. problems at home	1	2	☐ 43	100
e. personal problems	1	2	☐ 44	101
f. job or career plans	1	2	☐ 45	102
g. worries about unemployment	1	2	☐ 46	103
h. worries about nuclear war	1	2	☐ 47	104

2. In the past year have you seen a counsellor or therapist outside of school about any of the following:

a. choosing courses	1	2	☐ 48	105
b. problems with a class	1	2	☐ 49	106
c. problems with a teacher	1	2	☐ 50	107
d. problems at home	1	2	☐ 51	108
e. personal problems	1	2	☐ 52	109
f. job or career plans	1	2	☐ 53	110
g. worries about unemployment	1	2	☐ 54	111
h. worries about nuclear war	1	2	☐ 55	112

3. Is there anything you'd like to add? Please use the space below to tell us about your thoughts and feelings.

X. BACKGROUND INFORMATION

These questions are asked so that we can describe the group of students who answered this questionnaire

A. Your age ______ Years ☐☐ 56 57

B. Grade ______________ ☐ 58

Circle the number that best describes you and fill in the blanks that apply:

C. Sex 1 male 2 female ☐ 59

D. At what level are you taking most of your courses this year? ☐ 60
1. Basic 2. General 3. Advanced

E. Were you born in Canada? 1 yes 2 no, what country? ______________ ☐☐ 61 62

F. Before you started school what language did you speak at home? (Circle more than one if necessary.)
1. English
2. French
3. Another language ______________ Please tell which language ☐☐ 63 64

G. People sometimes identify themselves by race and colour. Which category below do you use to describe yourself?
1. Black
2. White
3. Native Canadian Indian, Inuit or Metis
4. Asian descent ______________ Specify, e.g. Chinese, Japanese, etc.
5. South Asian descent ______________ Specify, e.g. East Indian, Pakistani
6. Other ______________ Specify, if not included above ☐ 65

H. Do you live with (choose one) ☐ 66

1. Both parents	4. guardian
2. mother	5. group home
3. father	6. alone

I. What is your father's job? ______________ ☐☐ 67 68

Is he working now? ☐ 69

Appendix B:
Interview Format, Phase 3.

Name ____________________ Page 1
Date____________

INTERVIEW FORMAT

1) **Brief Intro.** -hello; random selection ("numbers from a hat")
-"BUT FIRST, would you mind:"

2) **Trait Form (STAI)**

3) **Longer Intro.** - thanks for helping; hour or so today: "fill out a few forms, ask your opinions.
-introduce self; affiliation
-general purpose of interview (greater understanding)
-"BUT BEFORE GOING ANY FURTHER:"

4) **Demographics:**

- FATHER'S OCCUPATION:

____

____ WORKING? ____

- MOTHER'S OCCUPATION:

____

____ WORKING? ____

- FATHER: HIGHEST LEVEL OF EDUCATION COMPLETED:

____

- MOTHER: HIGHEST LEVEL OF EDUCATION COMPLETED:

____

- POLITICAL PREFERENCES:
  FATHER: ______________
  MOTHER: ______________

- YOU:
- MEMBERSHIP IN CLUBS/ORGANIZATIONS:

____

____

- FAVORITE LEISURETIME ACTIVITY:

____

5) NOWICKI-STRICKLAND LOC SCALE

6) "OF THE FOLLOWING TYPES OF TV PROGRAMS, HOW MUCH OF YOUR TIME DO YOU SPEND WATCHING EACH?" *(Show participant following form).*

Name ____________________ Page 2
Date ____________

How much of your viewing time do your spend watching each?

NEWS

0 10 20 30 40 50 60 70 80 90 100%

ACTION/DRAMA

0 10 20 30 40 50 60 70 80 90 100%

COMEDY

0 10 20 30 40 50 60 70 80 90 100%

DOCUMENTARY OR EDUCATIONAL

0 10 20 30 40 50 60 70 80 90 100%

GAME SHOWS

0 10 20 30 40 50 60 70 80 90 100%

SCIENCE FICTION

0 10 20 30 40 50 60 70 80 90 100%

OTHER (Please specify)

____

0 10 20 30 40 50 60 70 80 90 100%

Name ____________________ Page 3
Date____________

7) **Favorite TV Program?**

____

8) **Coopersmith SEI**

9) **SCHOOL QUESTIONS:**

- Academic program type:
____

- Top three favorite school subjects:

1)____________________

2)____________________

3)____________________

-Favorite teacher(s):

____

____

-Future WORK/SCHOOLING Aspirations?

____

____

-HOW IMPORTANT DO YOU THINK THE THINGS YOU ARE LEARNING IN SCHOOL ARE GOING TO BE FOR YOUR LATER LIFE? (*Show scale*)

a) NOT AT ALL IMPORTANT

b) SLIGHTLY IMPORTANT

c) FAIRLY IMPORTANT

d) QUITE IMPORTANT

e) VERY IMPORTANT

10) PIL QUESTIONNAIRE

Name ____________________ Page 4
Date____________

11) OPEN ENDED: GENERAL ATTITUDE:

1) If you could "transport" yourself through time, where would you like to visit...PAST___
...FUTURE___

WHY?

("Neither" response: "Do you think being a teenager 50 years ago would have been different to being a teenager now? How?"

2) Looking into the future...what do you want to achieve to make you the most happy?

3) Imagine that, with a good campaign, strong support and guidance, you find yourself campaigning to be Prime Minister. You find that a great deal of the public supports you and how you want to get things done...
What are the major things you would want to accomplish?

12) "These questions concern your health..."
(HEALTH SYMPTOMS QUESTIONNAIRE)

Name ____________________ Page 5
Date____________

During the last 30 days on how many days (if any) did you experience the following:

12 a) Headache:
  1) None
  2) One day
  3) Two days
  4) 3 to 5 days
  5) 6 to 9 days
  6) 10 to 19 days
  7) 20 or more days

12 b) Shortness of breath when not exercising:
  1) None
  2) One day
  3) Two days
  4) 3 to 5 days
  5) 6 to 9 days
  6) 10 to 19 days
  7) 20 or more days

12 c) Difficulty remembering things:
  1) None
  2) One day
  3) Two days
  4) 3 to 5 days
  5) 6 to 9 days
  6) 10 to 19 days
  7) 20 or more days

12 d) Difficulty thinking or concentrating:
  1) None
  2) One day
  3) Two days
  4) 3 to 5 days
  5) 6 to 9 days
  6) 10 to 19 days
  7) 20 or more days

Name ____________________ Page 6
Date____________

12 e) Trouble sleeping:
- 1) None
- 2) One day
- 3) Two days
- 4) 3 to 5 days
- 5) 6 to 9 days
- 6) 10 to 19 days
- 7) 20 or more days

12 f) Trouble getting started in the morning:
- 1) None
- 2) One day
- 3) Two days
- 4) 3 to 5 days
- 5) 6 to 9 days
- 6) 10 to 19 days
- 7) 20 or more days

12 g) Stomach pains and/or "butterflies" in the stomach:
- 1) None
- 2) One day
- 3) Two days
- 4) 3 to 5 days
- 5) 6 to 9 days
- 6) 10 to 19 days
- 7) 20 or more days

Name ____________________ Page 7
Date____________

13) POLITICAL EFFICACY:

- Just take a moment and tell me what you think about politicians and our political system.

-<PROMPTS:> - Given it any thought?
- What do you think about the politician's job?
- What is the role of the citizen in politics?

14) COMPARATIVE AREAS OF CONCERN:

- Please look at the following "sliding scales."
  place a mark on each scale to indicate how serious you consider the issues to be, THAT IS:
  "How much 'worry' do they cause you?"
- Consider all the scales relative to each other.

SHOW SCALES

Name ____________________ Page 8
Date____________

Consider the following issues.

How much worry do they cause *you* ?

Consider the scales *relative to each other.*

FREE TRADE 0 1 2 3 4 5 6 7 8 9 10

ACID RAIN 0 1 2 3 4 5 6 7 8 9 10

HIGH DIVORCE 0 1 2 3 4 5 6 7 8 9 10

NUCLEAR WAR 0 1 2 3 4 5 6 7 8 9 10

OVERPOPULATION 0 1 2 3 4 5 6 7 8 9 10

AIDS 0 1 2 3 4 5 6 7 8 9 10

TERRORISM 0 1 2 3 4 5 6 7 8 9 10

Name ____________________ Page 9
Date____________

15) DISCLOSURE:

At this point disclose to target group that they were NOT randomly picked but chosen for their "specific concern in an issue like the nuclear threat."

16) When did you first learn about nuclear war?

Grade_____
Age_______

Have you kept yourself informed?

yes...... average...........no

If yes or average, "How kept informed?"

17) How well can you imagine the scene following a nuclear attack? Just take a few moments and try to "construct" a scene.....(wait 20 seconds)

How would you rate your image on a scale of 1 to 10 (10 being extremely clear...like a photograph)_______?

Can you describe your scene to me? the image? words=______.

18) INDUCED STATE ASSESSMENT (STAI)

Please continue to think about your scene (or the threat of nuclear war) as you fill out this brief form.

19) EFFECTS OF FEAR

Some people see the nuclear threat as quite frightening: Have you?

This fear can either:
STOP THEM COLD......................GET THEM "FIRED UP"

- If you have experienced some fear, how does it affect *you* (following this scale)?

- How do *you* explain your fear of nuclear war? What "causes" it? Why is it there?

Name ____________________ Page 10
Date__________

20) COPING

If you have experienced fear of nuclear war,

How do *you* best cope with it (get it to go away)?

<Classify statement:
PRIMARILY

- •Cognitive______ (restructuring_____)
  (info. control______)
  (decision control_____)
- •Behavioral______ (Action based_____)
- •Affective______ (Expression based______)
  (religious/moral______)
- •Social_________ (Informal networks_____)
  (Family__________)
  (Formal groups_____)

- What is the best attitude one should take when facing the threat of nuclear war?

21) DEBRIEFING:

Before we conclude, are there any questions about the nuclear threat...about arms, current political happenings, etc., that are confusing you?

Do you have any questions about this research project?

CONCLUDE, THANK PARTICIPANT.

Appendix C:
Parental Permission letter and form, Phase 2.

University of Alberta
Edmonton
Canada T6G 2G5

Department of Educational Psychology
Faculty of Education
6-102 Education North, Telephone (403) 432-5245

March, 1989.

Dear Parent,

The participation of your son or daughter is being sought in a study about the hopes and concerns that Canadian youth have about their future. This survey is very similar to another survey conducted in Edmonton schools about three years ago. From this perspective, we are interested in whether there has been any change over the three years in adolescent concern over any of the following three issues: the risk of unemployment, the nuclear issue, and concern over job/career planning.

Each student in the study will be asked to complete a questionnaire form at school, which takes an average of 20 minutes to complete. Students will not put their name on the questionnaire so that all the information will be private. However, the surveys will be "coded" with numbers so that certain students can be approached on a volunteer basis to share their views in a more in-depth structured interview. In the past, all students have expressed gratitude in having their opinions surveyed and explored.

Participation in this study will not influence grades or standing in school activities.

This study will take place in Public and Catholic schools throughout Edmonton. It is being conducted as part of a Doctoral dissertation through the Department of Educational Psychology at the University of Alberta. Questions about, or requests for a summary of the results should be directed to the individual noted below.

Please complete the authorization form below according to your preference and have your son or daughter return the form to school.

In the belief that we can learn more about the concerns of the "future leaders of tomorrow," we sincerely hope that you will consent to have your son/daughter participate in this research.

Sincerely,

R. Christopher B. Lewis, M.Ed., Ph.D.(Cand.)
University of Alberta. PHONE: 439-5245.

- -

I give________/do not give__________permission for my son/daughter_______________
__________________to participate in the study of student concerns about the future conducted by R.C.B. Lewis of the Department of Educational Psychology, University of Alberta.

Date______________________
SIGNATURE_____________________________________
(PLEASE RETURN THIS FORM TO SCHOOL)

Appendix D:
CCCAF Survey Administration Directions.

Canadian Children's Concerns about the Future

SURVEY ADMINISTRATION DIRECTIONS

1) Please allow 30 uninterrupted minutes for the completion of the questionnaire, preferably in a quiet atmosphere. Most students require only 20 minutes to complete the survey.

2) **Please begin by asking students to print their names on the upper right corner of the title page.**

3) Please **read "To the student" letter (page 2) aloud to students** with the students reading along.

4) Please **have all students turn to page one of survey.** Have them **fill out page one before turning to complete the survey. (NB: DO NOT LET STUDENTS RETURN TO ALTER ANSWERS ON PAGE ONE AFTER INITIALLY COMPLETING IT!)**

5) Students are not to discuss the questions or their individual reponses when they fill out the questionnaire. Hopefully there will be plenty of discussion following its completion.

6) Please bundle completed questionnaires and mark the bundle by:
   - date
   - grade
   - subject (if applicable)
   - presiding teacher

7) Notify:
CHRISTOPHER LEWIS
Dept. of Educational Psychology
University of Alberta
Phones: 492-5245 (days; leave message)
437-3774 (evenings; home)

8) Summaries of the data will be sent to you as soon as possible. Thankyou for assisting with this important study!

Appendix E:
Coding instructions for CCCAF survey.

CODING INSTRUCTIONS FOR CCCAF STUDY

(Use HB pencil or equivalent on Optical Scoring Sheets)

1. Use the attached Key to Coding for the first two sections (I and II; Hopes and Worries) and the last section (Background information) .

2. For Sections I and II (Hopes and Worries)
The responses should fit into the categories listed on the Key (Part A).
Figure out the appropriate category and darken with pencil the number corresponding to that category in the appropriate column in the "Name" area of the scoring sheet. **(First three letters of "Name" correspond to hopes 1,2,3; second three letters of "Name" correspond to worries 1,2,3.)**

3. For Sections III through IX
Transfer the circled number to the optical scoring sheet by darkening-in the appropriate number. Use the numbers in the far-right column of each page as guides to the appropriate response place on the optical scoring sheet.
NOTE:
- Responses 1 to 6 are left blank because these responses (Hopes and Worries) have been coded in the "Name" column area to allow for greater response diversity).
- Responses 75 to 83 (Q. 14, p.6 of survey) have altered options 1,2,...5.

4. For Section X (Background Information)
QUESTIONS A,B,C: Put in specialized locations on front of optical scoring sheet.
QUESTION D: Response #113
QUESTION E: Response #114
QUESTION F: Response #115
(NOTE: There is no "QUESTION G" [Don't worry about it])
QUESTION H: Options 1,2,3,4,5 to Response #116.
Option 6 to Response # 117(1).
QUESTIONS I to K : Use the Key (Part B) to determine the code for occupation. Darken the number corresponding to the appropriate category in the response possibilities #118 through #123.

For the part asking about working, put (1) for "Yes" and a (2) for "No"

Key to Coding
CCCAF Survey

A. Questions I and II

A. Any reference to nuclear **war** and/or maintaining **peace.**

B. Any reference to **Global matters:** overpopulation, starvation, racism, etc.

C. Any reference to **Work/Employment**: getting a good steady job, etc.

D. Any reference to success or failure at **School studies.**

E. Any reference to becoming rich, gaining **Property and/or money**.

F. Any reference to **Human relationships**: marriage, children, love, etc.

G. Any reference to **Own health:** sickness, getting old, death.

H. Any reference to **Health of others** (family members, friends).

I. Any reference to **Divorce**.

J. Any reference to **Violent Crime**.

K. Any reference to **Pollution**.

L. Any reference to **AIDS**.

M. Any reference to **Terrorists.**

N. Any reference to **Other** ("just a good life," "to be happy," etc.).

B. Questions I and J. : Parental occupation classification.

1. Professional, high management, Ph.D. graduate.
2. Teachers, nurses, lower management, technicians, undergraduate degrees.
3. Sales, service, assistance to professionals, skilled trades, diplomas.
4. Labourers.
5. No working income or no income: pensioners, students, homemakers.

Appendix F:
Parental information letter, Phase 3 (Interview).

University of Alberta
Edmonton
Canada T6G 2G5

Department of Educational Psychology
Faculty of Education
6-102 Education North, Telephone (403) 492-5245

June, 1989.

Dear Parent,

The participation of your son or daughter is being sought in a study about the hopes and concerns that Canadian youth have about their future. This study is very similar to another one conducted in Edmonton schools about three years ago. From this perspective, we are interested in whether there has been any change over the three years in adolescent concern over issues that pertain to the future (pollution, etc.) .

It turns out that your child has been randomly chosen to participate in part of the study which consists of an in-depth structured interview. This interview will take place on a volunteer basis only and the time and location will be set up between the student and a researcher from the University of Alberta. We will do whatever we can to make the meeting as convenient to your home routines as possible. In the past, all students have expressed gratitude in having their opinions surveyed and explored. Not only that, but they also see it as fun!

Participation in this study will not influence grades or standing in school activities.

This study will take place in Public and Catholic schools throughout Edmonton. It is being conducted as part of a Doctoral dissertation through the Faculty of Education at the University of Alberta. Questions about, or requests for a summary of the results should be directed to the individual noted below.

In the belief that we can learn more about the concerns of the "future leaders of tomorrow," we sincerely hope that you will see the importance in having your son/daughter participate in this research.

Sincerely,

Christopher Lewis

R. Christopher B. Lewis, M.Ed., Ph.D.(Cand.)
University of Alberta. PHONE: 439-5245.
ANSWERING MACHINE: 436-6219

Appendix G:
Student information letter, Phase 3 (Interview).

University of Alberta
Edmonton
Canada T6G 2G5

Department of Educational Psychology
Faculty of Education
6-102 Education North, Telephone (403) 492-5245

Dear

Sometime around the Easter Break (or perhaps, later in April), you spent some time filling out a survey that asked your views about the future. This was called the Canadian Children's Concerns about the Future survey.

Well, the next phase of this study is underway and consists of approaching randomly selected students (basically names drawn out of a hat) to see if they would be interested in being "interviewed" by a researcher for about an hour. The interview will be pretty casual....you don't have to come prepared for it or anything. It's just a matter of setting up a time with the researcher named below and then answering questions that reflect your ideas and opinions (in other words, it's NOT a "test," there are no possible "right" or "wrong" answers!)

So, would you be interested in helping scientists learn more about the "new generation" and your feelings about living in today's world? We certainly hope so. Most students already interviewed have said they found it fun and interesting. Please consider helping us out.

All you have to do is call the number below. If no "human" answers the phone (!), an answering machine will! Please don't be bothered by the machine, just leave your first name and your phone number and the researcher will return your call as soon as possible.

Thanks!

PLEASE PHONE: CHRISTOPHER LEWIS, 436-6219

Appendix H:
Social Skills questionnaire.

Student ______________________ Teacher ______________________

School ______________________ Grade __________

Date ______________________ Researcher R. Christopher B. Lewis

To the Teacher: These scales are being used for *comparative purposes only* (between students) and do *not* reflect an attempt to assess abnormalities such as conduct disorders, etc.

Please consider the following statements with regard to the student named above and circle the number on the scale that seems most appropriate. Make a judgment even if you have not directly observed the described behavior; assess the student in this latter case *based on your knowledge of the student.*

Thankyou for contributing to this research project.

	False Description			**Moderately Descriptive**			**True Description**
1) Works well with peers in group projects........	1	2	3	4	5	6	7
2) Engages in verbal social exchanges with classmates......	1	2	3	4	5	6	7
3) Volunteers to talk during group discussions..........	1	2	3	4	5	6	7
4) Responds positively to initiations from other students.........................	1	2	3	4	5	6	7
5) Volunteers for class and/or general school social activities.....	1	2	3	4	5	6	7
6) Assumes leadership role in classroom activities......	1	2	3	4	5	6	7
7) Engages in long conversations (30 sec. or more)........	1	2	3	4	5	6	7
8) Appears respected and liked by peers...........	1	2	3	4	5	6	7

TOTAL ____

Appendix I:
Letter to teacher re: Social Skills questionnaire.

University of Alberta
Edmonton
Canada T6G 2G5

Department of Educational Psychology
Faculty of Education
6-102 Education North, Telephone (403) 492-5245

September, 1989.

TO ________________________:

As we reach the end of the 1980's many psychologists are extremely interested in discovering what it is like to be a young person in today's world. In the Canadian Children's Concerns about the Future survey, administered in your school last spring, I was specifically interested in identifying children who: a) have strong views on current global problems and b) have definite orientations toward the future.

In a recent in-depth interview, ________________________ noted you as a "favorite teacher." This question was put to the student deliberately so that I could then approach the identified teacher concerning the enclosed form. Could you please take a few minutes and fill it in, with regards to the student? Of course, your participation is voluntary. However, I am interested in getting as broad a picture of the student as possible and your response to the questionnaire will greatly increase my understanding of the student's social-interaction skills.

Please place the completed questionnaire in the envelope provided and drop into the nearest mailbox. If you have any questions about the study, please feel free to contact me. Thanking you for your assistance in advance,

R. Christopher B. Lewis, M.Ed., Ph.D.(Cand.)
University of Alberta.
PHONE: 492-5245.

Appendix J:
Control group questionnaire, Phase 3.

DO NOT PUT YOUR NAME ON THIS FORM.

To the participant:

Thankyou for agreeing to take a few minutes to help us in developing a "comparison" group for our research.

Please turn to the following pages
and answer the questions.
Of course, there are
NO "right" or "wrong" answers...
just let us know your opinion.

When you have finished, merely hand in your form and leave quietly.

THANKS!

1) How much of your television viewing time do your spend watching each? —(Please look at each category in comparison to the others while answering...the total numbers circled do NOT have to add up to "100")

NEWS

0 10 20 30 40 50 60 70 80 90 100%

ACTION/DRAMA

0 10 20 30 40 50 60 70 80 90 100%

COMEDY

0 10 20 30 40 50 60 70 80 90 100%

DOCUMENTARY OR EDUCATIONAL

0 10 20 30 40 50 60 70 80 90 100%

GAME SHOWS

0 10 20 30 40 50 60 70 80 90 100%

SCIENCE FICTION

0 10 20 30 40 50 60 70 80 90 100%

OTHER (A favorite we missed?)

0 10 20 30 40 50 60 70 80 90 100%

____

2) What is your favorite TV Program? ____

3) SCHOOL QUESTIONS:

a) - Please list your top three favorite school subjects:

1)______________________

2)______________________

3)______________________

b) - After finishing highschool, do you plan to continue to university, college, or enter the workforce? (please check appropriate answer)

UNIVERSITY_______
COLLEGE (e.g., NAIT, Grant MacEwan, etc)_____
WORK_________
OTHER (e.g., travel, etc.)__________

c) - HOW IMPORTANT DO YOU THINK THE THINGS YOU ARE LEARNING IN SCHOOL ARE GOING TO BE FOR YOUR LATER LIFE? (*Use following scale)*

a) NOT AT ALL IMPORTANT

b) SLIGHTLY IMPORTANT

c) FAIRLY IMPORTANT

d) QUITE IMPORTANT

e) VERY IMPORTANT

4) Please fill out the following QUESTIONNAIRE

For each of the following statements, circle the number that would be most nearly true for you. Note that the numbers always extend from the extreme feeling to its opposite kind of feeling. "Neutral" implies no judgment either way; try to use this rating as little as possible.

1. I am usually:

completely bored.	1	2	3	4 (neutral)	5	6	7	**exuberant, enthusiastic.**

2. Life to me seems:

always exciting.	7	6	5	4 (neutral)	3	2	1	**completely routine.**

3. In life I have:

no goals or aims at all.	1	2	3	4 (neutral)	5	6	7	**very clear goals & aims.**

4. My personal existence is:

utterly meaningless; without purpose.	1	2	3	4 (neutral)	5	6	7	**very purposeful & meaningful.**

5. Every day is:

constantly new and different.	7	6	5	4	3 (neutral)	2	1	**exactly the same.**

6. If I could choose, I would:

prefer never to have been born.	1	2	3	4 (neutral)	5	6	7	**like nine more lives like this one.**

7. In my old age, I would:

do those exciting things I have always wanted to do.	7	6	5	4 (neutral)	3	2	1	**sit back for the rest of my life.**

8. In achieving life goals I have:

made no progress whatsoever.	1	2	3	4 (neutral)	5	6	7	**progressed to complete fulfillment.**

9. My life is:

empty, filled only with despair.	1	2	3	4 (neutral)	5	6	7	**running over with exciting good things.**

10. If I should die today, I would feel that my life has been.

very worthwhile.	7	6	5	4 (neutral)	3	2	1	**completely worthless.**

11. In thinking of my life, I:

often wonder why I exist.	1	2	3	4	5	6	7	**always see a reason for my being here.**
				(neutral)				

12. As I view the world in relation to my life, the world:

completely confuses me.	1	2	3	4	5	6	7	**fits with my view of life.**
				(neutral)				

13. I am a:

very irresponsible person.	1	2	3	4	5	6	7	**very responsible person.**
				(neutral)				

14. Concerning our freedom to make our own choices, I believe we are:

absolutely free to make all life choices.	7	6	5	4	3	2	1	**completely controlled by outside forces.**
				(neutral)				

15. With regard to death, I am:

prepared and unafraid.	7	6	5	4	3	2	1	**unprepared and frightened.**
				(neutral)				

16. With regard to suicide, I have:

thought of it as a way out.	1	2	3	4	5	6	7	**never given it a second thought.**
				(neutral)				

17. I regard my ability to find a meaning, purpose, or mission in life as:

very great.	7	6	5	4 (neutral)	3	2	1	**practically none.**

18. My life is:

in my hands and I am in control of it.	7	6	5	4 (neutral)	3	2	1	**out of my hands and controlled by external forces.**

19. Facing my daily tasks is:

a source of pleasure and satisfaction.	7	6	5	4 (neutral)	3	2	1	**a painful and boring experience.**

20. I have discovered:

no mission or purpose in life.	1	2	3	4 (neutral)	5	6	7	**clear-cut goals and a satisfying life purpose.**

5) The following questions concern your health. Please take a moment complete this brief questionnaire:

During the last 30 days on how many days (if any) did you experience the following:

a) Headache:
  1) None
  2) One day
  3) Two days
  4) 3 to 5 days
  5) 6 to 9 days
  6) 10 to 19 days
  7) 20 or more days

b) Shortness of breath when not exercising:
  1) None
  2) One day
  3) Two days
  4) 3 to 5 days
  5) 6 to 9 days
  6) 10 to 19 days
  7) 20 or more days

c) Difficulty remembering things:
  1) None
  2) One day
  3) Two days
  4) 3 to 5 days
  5) 6 to 9 days
  6) 10 to 19 days
  7) 20 or more days

d) Difficulty thinking or concentrating:
  1) None
  2) One day
  3) Two days
  4) 3 to 5 days
  5) 6 to 9 days
  6) 10 to 19 days
  7) 20 or more days

e) Trouble sleeping:
  1) None
  2) One day
  3) Two days
  4) 3 to 5 days
  5) 6 to 9 days
  6) 10 to 19 days
  7) 20 or more days

f) Trouble getting started in the morning:
  1) None
  2) One day
  3) Two days
  4) 3 to 5 days
  5) 6 to 9 days
  6) 10 to 19 days
  7) 20 or more days

g) Stomach pains and/or "butterflies" in the stomach:
  1) None
  2) One day
  3) Two days
  4) 3 to 5 days
  5) 6 to 9 days
  6) 10 to 19 days
  7) 20 or more days

6) - Please look at the following "sliding scales."
place a mark on each scale to indicate how **serious** you consider the issues to be, THAT IS:
"How much 'worry' do they cause you?"
- Consider all the scales **relative to each other**.

(AGAIN, YOUR NUMBERS CIRCLED DO NOT HAVE TO ADD UP TO "10")

FREE TRADE 0 1 2 3 4 5 6 7 8 9 10

ACID RAIN 0 1 2 3 4 5 6 7 8 9 10

HIGH DIVORCE 0 1 2 3 4 5 6 7 8 9 10

NUCLEAR WAR 0 1 2 3 4 5 6 7 8 9 10

OVERPOPULATION 0 1 2 3 4 5 6 7 8 9 10

AIDS 0 1 2 3 4 5 6 7 8 9 10

TERRORISM 0 1 2 3 4 5 6 7 8 9 10

7) One of the concerns that a number of students seem to have these days has to do with the threat of nuclear war. Some state that thinking of the threat cause them to feel anxious, others state that they never think of it.
This is the last question on this survey:
Could you please take a moment and try to imagine the scene following a nuclear attack.

Please continue to think about your scene (or if you cannot imagine" a scene, just think generally of the threat of nuclear war) as you fill out this brief form.
(Some of the statements may not seem to apply, but do your best to make your response fit)

Appendix K:
Transcripts of responses to open-ended questions, Phase 3.

QUESTION: IF YOU COULD TRANSPORT YOURSELF THROUGH TIME, WHERE WOULD YOU LIKE TO GO? (PAST OR FUTURE?) WHY?

I 6 = F; Like to see the technology; how things are going to change.

I 7= F; Well I guess it's cause life is going to be easier; lots of inventions are going to take place; like for something like pollution they are probably going to invent something for to make it like, you know, neutralize the pollution. And I think it will be easier.

I 16 = *F. ..I can see something new, something special. So I can see how I will be in the next ten years...I don't like history; those things have passed away..I can't get them back. (In the future) I can see how the world looks like...people will not be driving cars, they will be driving space ships..I like that kind of stuff.

I 8= F. In the future I would like to see the machines, robots, computers...it will be good. The past will be kind of boring...

I 9= F. ...To see how I'm doing...to see myself. Other than that, I'd pick the past (?) ...'cause I'd want to see what had happened to different things... to see how the world has changed...

I 4= P. I'd like to go back....grade six !..is that specific enough? (Laughs) ...because I'd want to retrace all the things that I...(relevant personal things?)
...yes that and everything else too...in general...I'd like to fix things that I didn't get a chance to...that's too late to fix now...school is a big one. Maybe if I could have gotten closer to my family..now it seems too late. When you're younger, I don't know, you sort of get a lot more chances...than you do right now, and you're more dependent on your parents, they look after you more than they do now (security feeling?) yeah....

I 17= *P. ("Middle earth" times; medieval times)...cause that's what I like to read...like Tolkien...I'd like to live in that kind of world....it seems like it always works out...like it's the way things should be...like if you go back into our world, like "Back to the future " or somethin, somethin's bound to go wrong, but there it's just, you know, happy..but still you get the wars and stuff there still...but at the end of the book it ends all right. Plus... like, I always wanted to..before I even started reading Tolkien, I just liked to live in a kind of a world like that...'cause I used to play the game "Dungeons & Dragons" ...and then I finally started reading about it, you know, and I liked it...

I 20= *P. Because then you didn't have to worry about what's going to happen if you get kicked out of the house...or if you lose your job...didn't have to worry about what you were going to do....or how you were going to die....nuclear war or something. (specific time?) Probably the '60's....when everybody was trying to change the world...they felt they were in control of the world and they could do anything to change it. They didn't have many worries like we do today.

I 18= *P. I don't know, because I probably don't that there'll be that much of a future left. 'Cause everything doesn't seem to be going that well with the world...with all the problems, I think the past would be better than the future.

I 19= *P. Because I would learn a lot about why we came to the way we are, and how the earth formed, and why we are the way we are because something always starts from a base...and the past would give me a good view of what we were before and how we formed and why we formed into what we are now. (How far back?) Um...about fifty years after the death of Christ.

I 2= P. Probably to the 50's, the 60's. 'Cause I like the music...it would be neat to back there and live in that time. It seems like, you know, no one had any worries...sort of thing...I don't know... Sort of the hippie era..because it seems like everyone is so free.. you know, "open views" and stuff...whereas today, people just..you know, you're walking down the street and no one says anything to anybody.

I 12=F. I want to see what it looks like.. how everything runs and stuff like that. I'm interested in how I'm going to look in the future...the year 2000 and what's going to happen. I want to know what kind of jobs we're going to have, what new technology we're going to have....

I 1=P. Maybe I could change something...something in my life or other people's...people I know.

I 14= P. Possibly to change a few things... a few bad experiences I'd say..for me personally, and a few for other people I'd say too....faceless people. Like world hunger is one of them. Maybe even stop the making of a nuclear bomb too.

I 15= *P. The 50's. Everything's cheaper, right? I'm more familiar with that time. (suggested that he was more familiar with culture, cars, etc. of that time).

I 10= F. 'cause I'd like to see what my life would be like, like if I would make my goal as a Doctor 'cause that's what I really want to do. I'd like to see what my marriage would be like and how, you know, life would work out for me.

I 11= That's hard....most likely the F. Well, because we know about the past, but nobody knows too much about what's ahead in the future. The future would be more interesting. (indicates no expectations about what the future would be like).

I 5= P. To the Middle Ages. 'cause I like, I don't know, I just like, you know, those Conan movies? I'd just like to be back then. Somewhere...

I 3= F. Australia, in the future. I just like it there, I don't know. And I have relatives who live there. It's away from everything. (why F?) Because in the future there will be a better life to live, like in the past it was a hardy life. Like you had farms back then and everything, and if the cow strays...or you have to drive it to markets...in the future there is not too much hard work.

I 21= *F. ...to see what changes would have taken place to myself.

I 13= P. To the 60's. (Focused on his view that this was a great time for the expression of freedoms and rights.)

QUESTION: LOOKING INTO THE FUTURE, WHAT WOULD YOU
LIKE TO DO WITH YOUR LIFE ?

II 6 = Go to the moon; experience exploring, discovering new things.

II 7= Well....., work and family.

II 16= *Peace on earth.I would like to be a part of that..I would try my best.

II 8= I don't know...(long pause)...peace...no wars...new discoveries

II 9= All my goals...(?)...which are to find...yeah!..the perfect girl, get married, have a family, raise kids and try not to have problems...'cause I see what's happening to lots of couples in these days of divorce and everything...I wouldn't like that...

II 4= I want to have a secure life style...a career...and eventually, a family.

II 17= *To stay healthy...just, live 'til I earn old age or somethin, and then maybe die or somethin...you know. The only thing I don't want to do is die young.

II 20= *The feeling that I'd helped a lot of people. Being able to bring a child into this world knowing that it's not going to die the next day because of our government, or.....

II 18= *I just want to succeed in my goals (play pro. soccer)...even if I can do that for a couple of years. I wouldn't mind being financially secure..have a wife, and a couple of kids, and just, you know, live like that. I wouldn't care if I had and eighty room house with fifteen cars...I don't see that as being important, but I'd like to have a...nice car, you know, a nice family...I just want everything to be..you know, the white picket fence and everything like that...But I'm kind of looking forward to hard times (too), then I can accomplish something, get over those...and it will make me a better person.

II 19= *Just me? Well, in the past there were a lot of things I was interested in and I had great chances to accomplish but I quit...just, for the sake of quitting, and I really regret that...now I've got the chance to be something, that I really want to be something great.. for me, something great would be to be a pilot....in the Armed Forces, and that would be just the greatest accomplishment in my life....

II 2= I want to do the best that I can do. Like if I get a job...do the best I can at that job..or be the best person I can be.

II12= (missed)

II 1= Well, I don't think of that because I think the world's going to end pretty soon. I think it's going to end in about, 10...15 years. No I just think of.. up 'til I'm about 23...that's all I think about. 'Cause I believe in the Bible..the Revelation...rapture...yeah. like everybody, like most of the Christians are going to be gone and then after that there's say, something like the UFO..like scientists say some kind of UFO came by. Yeah that's what's supposed to happen after the seven year.

II 14= For one, world peace is one of them. Uh, also other things I'd like to see space travel become almost a usual thing...I'd like to see that.

II 15= *Well, I want to be a Hollywood actor. To get fame, XXX, and fortune, that's what I'm trying to do.

II 10= I want to become a good Doctor. I want my marriage to be good...and become a Doctor.

II 11= Successful in life...well, security and stability and social order. Financially, mentally. A full life.

II 5= A girl that I loved and she loved me, I guess... and a little bit of money... say, above average. And holidays... lots of holidays going around the world.. see places, that's what I'd like to do.

II 3= To become something good. To become something that gets paid well and everything and gets what's good in life. Like not live a hard life.

II 21= *Cleaner environment; a cure for AIDS; improved relationships between people...people trying.

II 13= I would like to start from the bottom and work my way up...just like my dad...

QUESTION: Imagine that, with a good campaign, strong support and guidance,
you find yourself campaigning to be Prime Minister.
You find that a great deal of the public
supports you and how **you** want to get things done...
What are the major things you would want to accomplish?

III 6= (long silence)I'd like to do something for starvation; there are these people who live in the streets; like to find a home for them.

(unsuccessful prompt for more)

III 7= The unemployment of people; the food (prices) have to lowered because like people who doesn't have a job has to, you know, has to buy stuff if they don't have a job, so that's why I have to um, erase the unemployment first, and then lower the price of the food, then get the jobs up...so then everybody will get a job, then... when you get a higher job...so like then you can raise the price of food right away because everybody started working. (Prompt)

Well probably free trade, and trading with the other countries.. I'm kind of "middle"(ground) on it...like keep an eye on it, but encourage it.

III 16= *(Tapping head; struggling) So many things...to show the world that my country's the best.....I would like to make my country high in technology (like Japan).......to make the lives of the people better.........there should be no army in that country (NO!)

III 8= I don't know...I have no idea...(very long pause..no responses to prompts)...I never think about it...

III 9= Well, for sure...no abortions...'cause that's killing...little kids,
and , uh, cut down taxes,....hmmm, try to help preserve the parks...to save to from pollution...

III 4= Ummm, world peace. That would definitely be the most important thing. like not just Canada and the United States, but Canada and...all nations could come together and just say, y[illegible] I think it's really stupid...the...you see, I would rather not worry about the country, the country's economy or whatever, and the deficit and all this but, you know, if, it all wouldn't matter if we weren't here. (other things?...or...) yeah that's the main one.

III 17= *Heavier control in getting drugs off the street or somethin, 'cause you know, I've got a lot of friends who do drugs and stuff..like it's totally screwing their lives up...like I did drugs a couple of times but I stopped...but now I see like my friend D____, you know, like he used to be an all right guy, now that's all he does is smoke drugs. (other?) To help poor people. I always said if I ever won my ten million dollars or somethin I'd help poor people or somethin.(?) No that's basically it.

III 20= *Remove Free Trade, because we're all becoming Americans...I mean they're just taking over our country...and they want to have their Cruise Missile testings and everything. (So another thing would be to) lower our activities with USA...they're just using us. (?) Maybe just helping the teenagers...like, suicide, emergency shelters, and all that. Make sure they know there are people around to support them.

III 18= *For us, for me, I think that, you know, we're thinking of building nuclear subs and stuff like that? Like I'd cut...you know we don't even have to have a military really..we're so, we're almost like the United States anyway or the United States are almost like us...we're like one...we're so much alike. So even if we went to war they would help us anyway. So I feel, like, we should have an army, but we don't have to have everything extravagant like they do, because why? they're just going to support us anyway. So that's one thing: I think I'd cut down on that, and then we'd have more money for the people...

The second thing, I guess I'm Catholic so I'd have to say that, I'd have to change that abortion ruling...I'd have to say there'll be none...Like I think a man has a right to...like, if the woman and him have sex and have a baby I think that he has just as much right as her to keep it...So I'd think I'd change those two things...and...no tax, I don't know. Yeah, I think those three.

III 19= *I think the finances in this country are so mixed up and misconstrued that I would really want to sit down and look at all the plans and just fix everything there that I could. Then comes the arms race. Since Canada is not too much involved I would like to influence the arms race between the USSR and the USA ...try and get things solved there...try and get some more peace.

Then, pollution-wise, I can't say what to do about pollution right now, but there's definitely something I would like to work on.

III 2= (First), to do what the public wants...because it's not only my country but it's also theirs. Like...a lot of people do not want Free Trade...people that I..like my parents talk to. And...pay off the Canadian debt...that's about it.

III 12= Probably help the third world, I think...they're being cut-off...like I heard you send all this money to Ethiopia and they use it for weapons...instead of for kids and....(?) Treaties I guess, because I don't like wars...and uh, Keep Free Trade...yeah I think more free trade.

III 1= Well, I'd like to see...like try to help stop Apartheid in Africa. And try to be friends with the Soviets and the United States...and all the communists...try to kind of change them...a little bit at least. Try to make them think peace not war like the uh, Cuba guy....no that (confusion, then) Noriega guy. I'd want to try to make him happy..not happy but, try to change him because he's always trying to make war. (And) I don't think I want Free Trade anymore...because they're raising the prices. But take ten years and there is not going to be any planet.

III 14= Let's see...I was talking to my brother about this last night...uh, first of all, pay off the entire country's deficit...or pay off the world's deficit...start brand new..fresh all over, like have no debts, nothing. I'd like people to be treated fairly and equally, like get rid of Apartheid in South Africa and stuff like that. Just over 'n all...a better place to live...the world a better place to live.

III 15= *Well, the debt...deficit; Build some more warheads, our arsenals; Space program..; and horticultural methods (to increase our food creation).

III 10= Well, like you see, I'd try to get financial aid to people who need it. I'd make sure the people who can afford to pay taxes, do pay them. And I'd make sure a family is not on welfare if they have able-bodied people that can work that they should be out finding jobs. I'd also be in there for honesty...like I believe that not all politician's are sleez-bags. I hate war. I'd probably, you know, me and my grandfather were talking about nuclear aspects, and I said "well ten years ago, when they were making them they didn't listen...that if they would fall into the hands of wrong people there could be great destruction" and now they're going, "OK, we'll, we'll stop them" well, you know, they've wasted millions of dollars already, dollars that could have been put into something more useful. Like helping people who need it. They didn't listen at that time, but because of their stupidness they now wasted so much money. Like I don't know what other people think but nuclear war is a big hazard. You know, a lot of people have what they call "two-sidedness" and like, you can portray one side but be something else, you know, if..if there was a major powerful country with some prime minister, or even some criminal who could, you know, it's not likely they could get hold of nuclear arms...but there is always that possibility...if they were to fall into the wrong hands, well, we might as well kiss this world goodbye.

III 11= First of all, get.....better relations with other countries. Work on peace and everything. Help the people, of course. Give money and stuff and funding to major organizations for...uh...science stuff...advancing the space program or cure for deadly diseases. Give the people a chance for what they want to do. I mean a lot of the poor won't work and that' s why a lot of the are poor. But, a lot of them can't find work...so open...give them the chances for a better life and stuff.

III 5= Well uh, lower the taxes...try and help the poor or whatever by welfare or something, and get the trees...stop them from cutting them all down like, take a certain amount so they can control the forests... And I'd try to get America to slow down on the weapons and stuff. Try and keep a nice clean country... get lots of jobs.

III 3= Peace in the world. Like, sign peace treaties. Um, I don't know... make, uh, everybody happy. Try to make everybody happy, like, for the welfare people and like, give them more money so they can lead a better life.

III 21= *Number one: work on pollution and the environment...(no others given.)

III 13= 1) review and "nix the GST."
  2) lower taxes.
    3) deal with unemployment as well as helping the homeless.

QUESTION: TAKE A MOMENT AND TELL ME WHAT YOU THINK ABOUT POLITICIANS AND OUR POLITICAL SYSTEM. (PROMPTS: WHAT DO YOU THINK ABOUT A POLITICIAN'S JOB? WHAT IS THE ROLE OF THE CITIZEN IN POLITICS?)

IV 6=I don't know, don't have much interest in that; like I don't know much about it. (role of citizen:) this country is pretty good; they have (??missed??) and everything, somethings...they have rules..and laws, that...things that we cannot do. Sometimes the laws are confusing.

IV 7 = Well, it's mostly business; they want the country to be prosperous, you know? so that's why they debate a lot about what's good for the country..it's mostly about business, money; it's a hard job cause lots of people have lots of ideas; like if this guy has a good idea, the other one must have another idea that is, like higher than theirs. (pretty competitive) It could be a good job if there's no, uh, "politics" whatever, yah? but if it's more like business, it'll be the same thing. (Normal guy-on-street) should have a say cause their the one that's gonna be affected by all the decision that the politicians make...yeah, I think we have a pretty good say in things, right now. I think we should go (and vote) because it affects us...well we can't right now because we're not citizens...but we tell our friends, like who are citizens...to vote this guy, cause will feel strong for this guy...

IV 16=*(the political system) is fair and good.
(politicians) are doing a good job.
(Q: role of citizens?) they don't have a major role
(showing stress, poor focus on question; asked for rephrase of question)
(says he's coming up blank)

IV 8= (Politicians) are very good leaders...they keep the country free...it's a tough job because they have to make a lot of decisions. (The citizen's role) is to vote, to choose. As an individual I can't do nothing...but all together....

IV 9= Haven't really thought about it...(?)...(Politician's job) is to listen to the people...sometimes they promise something and then don't do it, ... they would do it just to get elected or something. (? Role of citizen)...I guess it is to follow the law. (Whether people have a say in politics or not) really depends on the people...or the person just "walking down the street.." cause some people are satisfied with the work the politicians are doing...others may like to see some change, and would say something. It's based on the satisfaction a person feels about the politician's work. I believe in the power of the citizen to be heard...

IV 4=I'm not really into politics...(laughs)..but to me they seem like they're conniving...they're out to get whatever they can...but then they're trying to do it for the benefit of the country, whatever...but..... I don't think they do. I think they very seldomly do things for us, or the society..but they do things for themselves...whatever would be good for their position. (Political system in general, works?)....yeah it does, I think it's a pretty good system. (role of citizen?)...well I guess we can be heard if we get together...if it's just one person with an opinion it's not really going to matter, but in Canada I guess, if you really want some thing to be heard you could do it. I think..I think we have a good system because I always keep comparing it to like, the Soviet Union...and what's going on in China right now...it's just horrible they have to resort to , like violence to be heard...it's obvious you don't have to do that in Canada...everyone gets a chance.

IV 17= *I think it's just a waste of time. Basically they're not doing anything to, to help...I think they're there just, you know, there for the money. If they really wanted to help they could...but they're not. You know, you get the odd time when they make a hospital or somethin for kids or somethin, but, basically they don't help very much.....(citizen?)...I think we're kind of helpless...I think we have no say in it...

IV 20= *They're incompetent. They don't know what they're doing....I mean, Mulroney got elected and all that, but when our generation turns eighteen and we're allowed to vote, there hopefully will be change in something because he doesn't know what he's doing...he doesn't listen. I mean a lot of us don't like what's going on...but they just don't listen to us because we're just not voters yet. And then all of a sudden when we become eighteen they're going to listen to us and do this, and this, and this....
(GOOD politician's job?) ...to listen to the people and do what they want.. because I mean they're the ones that they're supposed to be representing...and they're supposed to listen to us about everything... I mean, we shouldn't have to read the newspaper or watch the news every night to know what's going on...(Citizen?) To get much more involved...actually, even if you have to picket and get arrested...I mean that's noble enough to be recognized and politician's should listen to the people....normal people of this city, I mean, the workers, not necessarily the one's that are in the parliament buildings or anything...

IV 18= *Well I don't know about other provinces, but I look at Don Getty, and I see him...and his son....I think they're very influential people, because his son gets charged for cocaine and he got off...he got acquitted...so I think they're very influential people and they fight for things you know, if I were to do the some thing he did I would be in jail...But his son, because he has the money and stuff, you know, he can get him out...because of who he is. Maybe influential, but...some of them are good, some....you know it's hard for me to say 'cause when I see some people and I see they're good at trying to help...look at the Opposition, and I think they're doing it really good...because it's...what they want for the people. "Cause everything that goes wrong, you know, they'll say what they want...the Opposition. Then I look at it as if they were in government. they'd probably do the same thing...I think they just say that to get the people on their side. I don't know...I think politicians can brainwash you. I don't think they're sincere at all, because they, uh, make a lot of money...you have a lot of power. (They're job should be) to help the people, obviously... I think more money could be generated to us in stead of to other things that they have. (Citizen?) Well he should have an input, he should have a say. Because we have the Bill of Rights, we have freedoms to do such things, I think we should express our freedoms...Like I look (at China) and I feel we're so lucky that we should express our feelings, so when I turn eighteen, I'll be voting and...it's really hard to say, though...because they're all lying...like I think they're all lying pretty much. Like, I'm sure, in some areas they really try, but they'll do it for the first year, the second and third year you know, they're not really doing much, and then the last year when it's a campaign year again, they start up and do everything 'cause everybody looks and say, "OH yeah, he's doing this and that and..." So I think the first and last years...but the middle years they don't really do much.

IV 19= *I would have to say that some politician's are all talk and no action. And some politician's are trying to be too good for their own good. I think that citizens get suck into it too well..they, uh... follow it too much, and they believe them too much, and they vote for them and nothing happens or...even worse. That's just it...it's very political, I think politician's compete way too much for the country's own good. They sit there and they put each other down and that doesn't look well either. And when they do compete they put the other party down but..under wrong grounds...under grounds that are not true. (Citizen?) Well, besides voting we don't have much to say.
...Except if they write letters to their local MP, but I don't know if they even read them.

IV 2= I think (politicians) lie a lot. When they are in their campaign they say one thing and then they do another...just to get in and please the public until then. If they campaign for something they say they are going to do, they should do it and not just do it to get in. They should follow through with what they say....some politicians are like that. (Citizen?) I think they should choose the right person...like not just choose the PC because everybody else does. Or if they're going to vote..listen to all the views, and not go in to vote 'cause you "have the right" or whatever...just waltz in there and put an "X" on whatever. (Voting is a powerful thing? Answer: yes)

IV 12= I don't know much about it because I don't like it for some reason...I'm not into it. I'm even afraid to vote...I'd probably go there and just check some number off...somebody I'm not even thinking about...because I just generally don't care who's leading the country. Just lack of interest.
(Politician's job?)Yeah, they do (their job) pretty well, but I don't know exactly what they do though (Citizen?)Well, they're the ones I guess who pick...who rules and stuff like that, but like, they really have no.....like, it's kind of "majority rules" over... and they really, uh, have "no say," kind of...like sort of half.. 50-50 have say in what goes on....The politician's may just over-rule what people say...

IV 1= Some of them (Politicians) are bogus..some, I don't know, some have pretty good ideas. (their job?) Well, try not to make everybody pay too much taxes...not to waste too much money...but if it's a good cause, they have to. (Citizen?) Yeah, they have to know who they want so they can have what they want too...I don't really keep up on politics.

IV 14= Well, I do agree with some of them and I don't agree with another part of them. Personally, I think we should just scrap the entire idea and start all over again, new. With a different system... where it's not one person that makes all the decisions for everybody, it's more or less an almost unanimous sort of thing or deal where everybody can make a decision. It won't mean they'll get it, get there way, but maybe put in, uh, a substitute for that person who didn't like that. And let them have almost, in what they in fact...would be what they wanted. It's an actual fact that most people have their way. (Citizen?) Well I think it makes no sense because when voting day comes people all see people voting for this one person so they decide, "well I'll just go with flow." They don't get a choice on who they're going to vote for and some people just don't vote. And the people that do there's too little of them...it doesn't make a difference. (Is there control of the system by individuals?) No, not really....

IV 15= *Well, I think some of them don't really know what they're talking about, some of them try to keep some of their promises...and others, well, they sort of do a little and then they stop. They sort of give in after they start something. (Politician's job?) To run the country. (Indicated that he wouldn't want the job; that they don't do the job well ["not really"]; and that the highest he'd like to achieve is be the "president of a company") (Citizen's role?) Vote and state opinions. If there ain't any citizens they won't have any one to run them. Right now I don't give (much thought to it).

IV 10= (Politicians) should play fair.. a lot of politicians say they stand for honesty but then once they're in office...where's their speech? gone...
(citizen?) Well, I think the average citizen has to express to the government what they need, what they want, ok....and then they should go out and vote, vote for the people who they think can do the best for the country. Not necessarily for themselves, I mean, "this guy wants to help me so I'll vote for him"...I think the average citizen should look for what would be best for the country. I probably wouldn't have much trouble being a politician because I'm good at making decisions...I mean, I usually think ever what's going to happen before I do what I do. It really pays to think ahead.

IV 11= I think a lot of it is pretty stupid. All these stupid procedures for simple tasks. I mean, we are trying to get my name changed...we've got to go through I think fifty people just so we can see if we can get my name changed. It's completely stupid. A lot of (politician's) make some pretty stupid statements when you listen to them on TV and stuff. (Citizen?) Well I think they're the main people because Politician's are there to meet the needs of the people, so people will have a lot of the.....uh..decisions in politics.

IV 5= They're doing ok, I guess, I don't know I heard of some stuff from my uncle or something like that he was telling me some stuff like "the mob runs the world" and stuff like that so... I don't know. I'd have to experience it for myself. (The political system) is Free...that's good enough for me. There are lots of advantages to life nowadays, opportunities.... (Citizen?) Yeah, if they really got into it they could have a say...if they stay out of it then they're not going to have any...

IV 3= Not very much. 'Cause I can't help nothing about it. Like I don't think I'm old enough to help start, like, do anything about it. (Citizen?) I think that more people should vote 'cause I know my parents don't vote. I guess (they) don't think that if they voted it would help anything, but.... I'd vote if I had the chance. I don't. (Politicians?) I don't think they react to people well enough. They could do more to help others.

IV 21= *I don't trust them.....they take luxurious holidays that we pay for in taxes...now all the GST stuff. (citizen?) at least we have the power of the vote, which is a lot better when compared with other countries.

IV 13= "They do more harm than good"

QUESTION: HOW WELL CAN YOU IMAGINE THE SCENE FOLLOWING A NUCLEAR ATTACK? PLEASE TAKE A MOMENT AND DESCRIBE YOUR SCENE TO ME. (NB: Numbers in brackets refer to number of words in statement).

V 6= (5)

People dying and fire everywhere

V 7= (28)

Well, everything's torn down, lots of people wounded, no, they be dead, and everything would be.. torn down...total disaster..if there was a really powerful..like..weapon.

V 16=(74)

*The whole city will become a desert...nothing..oh..no glass, no glasses (?)no people...oh..it's it's terrible...oh...and nothing...People are calling for help but nobody comes...I get afraid of that you know..when you really need somebody but nobody's there, you know...you feel...(oh)...you're in pain and upset, in pain you know, and nobody can help you at the time you know when the bomb drops down...nobody can help you, so.......

V 8= (17)

...a world destroyed, no life on earth, no people left, no animals...just, just a world empty...

V 9=(26)

Everything is just dead...see, half the town...'cause everything else is just blown apart...no people around...ash all over the place...no life whatsoever.

V 4= (55)

There just wouldn't be anything...after a nuclear bomb...because the people that do survive might as well be dead...the radiation lasts for, what?, ten years after a nuclear war or something like that...so ...(see any mental pictures?) I see that movie..TDA...just people who are walking around in that...that "snow" afterwards ....and there's nothing around them..they're just waiting...to die.

V 17= (85)

*Well, I would probably be sleeping or something...you know I think maybe they'd come at night, and ah, I'd wake up and sirens would be going and then I'd get outside, and

I'd be all scared, you know, and then just go with my family in the living room,. you know, we'd all be just crying and stuff, and then look outside the window and... the city center's in a big mushroom cloud and then, and then... we're just all dead. That's the way...that's the way I think of it.

V 20= (30)

*..Deserted land with no living beings...there is no buildings, just rooms on the ground, and dead bodies lying in between. Is that the kind of world you would like to bring a child into if it's going to be like that?

V 18= (90)

*Just total waste...that's all I can see. Like if I lived, I think I'd probably want to die...Like if I had to die, and it was a nuclear war and that's how everybody would die... I'd like to have the bomb explode just a few feet away from me so I wouldn't feel nothin'. I wouldn't want, like, I saw the people living and, you know, they're suffering cause of radiation ...and you can't really start up another society because everyone is so sick and everyone is going to die...there's no food...the radiation is killing you and everything...

V 19= (47)

*It's not a picture I like to imagine...it would be quite devastating...Absolutely no human life and anything that was standing on top of the earth is now on the ground, full of smoke and ashes and it's all still and all there is just ashes and smoke and there's not a breath around.

VI= I guess I feel that, uh, going through my life, making my own decisions..achieving my goals...it's life itself, it's a track that I'm going on and that's a track that everybody else is going on. Now, something so elementary as two countries fighting over something could disturb a person's life or billions of peoples lives just because they're fighting over something I find that so utterly disgusting...(laughs)..that's just the way I can put it. It's unfair, it's disturbing life itself over a fight...over a difference of religion or opinion over something...one is communist, one's capitalist...well let's drop a bomb on each other..that will solve it. That's the unfairness and the disturbing of life that upsets me. It's not really the loss of life...we're all going to be dead, we can't feel it anyways...but they're just being silly and unjust.

V 2= (22) (very nervous; flushed face; easily overwhelmed if image clearer?)

...There would be nothing left...it would be just gross...I don't know, it's...like if I was the only one that survived...devastated...

V 12= (35)

Dead people everywhere and trees...everything's kind of wilted and dead...kind of gross and ugly...it would be dark and ugly...everything would be dead, lying around, like the animals and everything...people and....

V 1= (87)

I think...well you know how it breaks something in the air and that makes it all...wacky? I think it would be snowing and then sunny, and snowing and stuff. And then the rays...the ozone layer would be broken or something. And if you go out there those things will go through your body and you start...your hair starts falling out. I think the city would look pretty wrecked up...like if it hit right in the middle some of the buildings on the outer parts would probably be still standing with their glass broken. Everything melted...

V 14= (40)

The land would just be a barren wasteland, nothing left, not even buildings, just crumbled dust...no life. Darkness, I'd say, would cover the earth...with a nuclear fallout winter or something like that. Uh, it would just be a scarey feeling if I was the only one left and there was nothing out there.

V 15= (57)

*Well, I see holes and rubble, and stuff. The rest is black. Everything is black. There won't even be people. Well, except when they come out of the fall-out shelter. But, I don't see much. Charred, yeah. Well, there might be some people, but I know everybody is going to carry a weapon or something. And they are going to hunt down for food and there might even be cannibals, I don't know.

V 10= (25)

First of all there would be a lot of dead people, a lot of blood shatter, a lot of things destroyed for no purpose at all. Ok, and then, in my own head, it's just probably go around and ask, "why?" There's no reason for it, I mean, everyone says, "try to make peace" well, with a whole bunch of nuclear arms laying around, you know, it's kind of, kind of doubtful. But I just... I hate nuclear war, I don't think I ever will like the idea of nuclear arms. I don't know. Some people hold different views, but that's mine.

V 11= (31)

Well, it would be pretty dark and everything...dust flying everywhere...big smashes all over, not too much standing. Disease...I mean, just, as if, you could see disease. It would be pretty dark and desolate.

V 5= (27)

I've always thought of it as darkness and coldness, like, gloomy? sort of gloomy outside... there's no sun, it's just gloomy. All these.... bones lying around and everything smashed up to pieces.

V 3= (0)

It would just be everything destroyed for no reason. I can't imagine it.
(Asked to "just think about the threat of nuclear war as you fill out" the STAI-State form. She received an anxiety score above the 96 %tile [female])

V 21= *(Unknown; tape lost; noted that she referred to opening scene of movie "The Terminator")

V 13= (unknown; tape lost)

QUESTION: WHAT "CAUSES" YOUR FEAR OF NUCLEAR WAR? WHAT IS IT ABOUT IT THAT IS FRIGHTENING TO YOU?

VI 6= They can kill so many people at once; how can someone create such a thing? (indicates a fear of our own knowledge)

VI 7= Well.... the loss of my parents, sisters and brothers, friends...and probably me, dead...you know, and...loss of everything, like, you know, dead...nothing. Everything,..everything is lost (focus: loss of living people close to him)

VI 16= *No human thing...all got hit..it's just a..only a bomb, like you know, it was dropped down on the ground and ...woah... and people...it's just only a bomb...I don't know why we got those power, you know, that they can kill so much people..people dying you know?

VI 8= Like there will be no people left...the suffering...

VI 9= ....'cause it would be all over the place...all the killing...people...all the destruction it causes. I don't know, it just scares me when I picture what I have in my head sometimes...and I can see it...and I see no life whatsoever, no, nothing...just dead things..no not dead things but, uh...dead town.

VI 4= Well, that's easy: It's just that...um..it's not up to me...like I have very little to do with it...it's up to who ever is going to decide to start a nuclear war...it's up to the super powers...and it leaves me in a position where I can't do anything and I'm sort of just waiting for it to happen.

VI 17= *Death. Just the death part of it....(your own? or...) of everybody's... but mainly my own. Like it's a waste, everybody dead. That's the death part of it...Like I wouldn't like to see everybody...You know I can just imagine when this happens everybody running around, scared and knowing they're going to die...and I just think...it would probably make me die before the bomb killed me...'cause , like a heart attack or something.

VI 20= *...those who have the bomb isn't giving anybody else a chance...when I grow up, like, if I ever get married, and I want a child....why would I? I mean, you're going to bring it into the world with terror, destruction, mutilation...what's the use? it's just going to live the same like you lived...in anxiety ....not knowing what's going to happen the next day...and knowing that you are in the hands of incompetent fools....the government...which doesn't listen to any of the people, whose opinions are pretty strong, and if they just listened to them it might change a lot of things. You have no control over it...what can you do? Because so many people have tried stuff but there's nothing..."cause when it comes election time they just keep voting the same people back in. They haven't done anything to prove that they can improve our economy or our life styles...

VI 18= *Death. It's not like it's just a little bomb that explodes and it's going to kill...like you know...even..like...not a little bomb but, like, a bomb that can kill 100,000 people..like I don't mean that as a "little" bomb, but compared to, you know, nuclear war... Because, you know, if someone was to say that to me I'd be frightened, obviously, but then I'd think, "but still, society could just...uh...just pick up and go again" There'd still be other people so you continue. Like I picture nuclear war as nobody surviving. Everything dies.

VI 19= I guess I feel that, uh, going through my life, making my own decisions..achieving my goals...it's life itself, it's a track that I'm going on and that's a track that everybody else is going on. Now, something so elementary as two countries fighting over something could disturb a person's life or billions of peoples lives just because they're fighting over something I find that so utterly disgusting...(laughs)..that's just the way I can put it. It's unfair, it's disturbing life itself over a fight...over a difference of religion or opinion over something...one is communist, one's capitalist...well let's drop a bomb on each other..that will solve it. That's the unfairness and the disturbing of life that upsets me. It's not really the loss of life...we're all going to be dead, we can't feel it anyways...but they're just being silly and unjust.

VI 2= ..because if the bomb goes off I won't have the rest of my life, my children won't have their life, and everything will be gone...wiped out.

VI 12= What scares me is like getting sick and stuff like that..the radiation hitting you and then all of a sudden you could be sick and you just keep getting sick, and sick, and sick....til you totally kill yourself off...like it's a slow death kind of thing...that's what I don't like. (For myself and) anybody...you're watching, say, your mother or somebody like that going through the same thing but you haven't got sick yet...watching them die off. Especially not knowing when its going to hit you...cause you know, a nuclear war...and it could be spreading and spreading, like, that radiation.....

VI 1= Dying. Everybody dying. If half the population is dead , and then the animals would be dead and the other half will die too because they won't have nothing to eat. They can't survive on anything 'cause everything will be contaminated. Like they try to keep warm, but the stuff will go back in the air from the wood...and so you really have nothing.

VI 14= It's a savage, very selfish thing...because two countries have the world in their hands...the entire earth, some of which isn't even theirs, in their hands and they can do whatever they want with it...whenever they please, that's what I think. I think two, big, kids...ok, I heard this from somebody else, two children, in a room, waist-high in gasoline...two of 'em...both of 'em have matches, only one has three and the other has two. One side with three is supposed to be safer. It just makes no sense at all. (It makes me feel) powerless and angry because I feel that I cannot do anything about it, myself.

VI 15= *Well, it's the way the people die, you know. I mean, it's OK if they die by bullets and everything, but I don't think we should die by gases, you know, radiation killing you off, burning them, cooking them...It's just weird.

VI 10= It's probably there because, well you think of how many lives have been wasted...how many people's lives and homes and dreams have been shattered...but for what reason? ...there's nothing at all. They tell us kids, "well, don't fight, settle it, settle it like adults" and then you have these two countries who are headed by adults throwing nuclear weapons at each other? it doesn't make sense.

VI 11= Well, you don't really know what is exactly going to happen. And that can be pretty scarey a lot of the time. Not knowing what's...going on. Um, with a full world war with nuclear weapons, if you're nowhere near the explosion there's still the chance that you're going to get killed..just from ...whatever. It's just like putting yourself in a mass grave. An everybody in the country. Like in nuclear world war...I mean, fifty people survive maybe? if you're lucky?

VI 5= Death and non-existence for humans and stuff... we'd all be dead. There would be none of us left. The world would be gone. It's...we'd all be DEAD, that's it. If we're all dead, what are we going to do then, eh?

VI 3= When two people can't get along with each other, like a group of people, like, places, like U.S. and the Soviets...and they can't get it together and they get into an argument and then they start up a big world war. Like, when they fight for no reason. It's just that the weapons frighten me. When I see the weapons that they have, like, how can you ruin the whole world at once?

VI 21= *(first mentioned) Personal death; (then:) "no one left behind"
(and:) "the world destroyed".

VI 13= (clear references to "mega death" concept)

QUESTION: HOW DO YOU COPE WITH THE FEAR YOU EXPERIENCE?

VII 6= I just try to think of something else; (indicates she can't talk to anyone about it but will listen and welcomes other's concerns; but appears to have no one to turn to; admits getting nervous talking about it because "others may make fun")

VII 7= Well sometimes I forget about it , sometimes I think about it, if it's going to happen what do you have to do? ...right now, so when the time comes you have to be prepared...like do stuff that you have to do now, before... like if you can do it now...if you started later on it's too late (focus: suppression of thoughts and "buckling down to work"; admits to sometimes talking to sister[21 yrs], like: What is she going to do first, and stuff, what's going to happen.)

VII 16= *Sometimes I'll go to the washroom, and take a towel and wipe my face and then I'll go to the kitchen and have a glass of hot tea, or maybe hot water, you know? sometimes I say things back to myself to make it go away..sometimes it goes away, sometimes it can't...sometimes I hit my head like this..(strikes forehead with heel of palm of hand)...

VII 8= Well, I think I will die anyway...in a few years...when I get older...everybody has to die...there's no way of getting out 'cause nobody can live forever......I, I say to myself that I will die anyways...

VII 9= Sometimes I listen to music, or, think about people..like my girlfriend (reports haven't talked to her about his thoughts)..sometimes when I'm with her I feel ...sort of mad or something...thinking about that ...and she calms me down. (Talked briefly of informal friendship groups; have talked about issue; "it's scarey:" this is what they tell me: alone we can't do anything...'cause what's the point if one person wanted to fight the whole world...but if there was enough people, and we could make the politician's realize...then maybe we could do something about it).

VII 4= Well, I just...try not to think about it...and then I think about ..the good things that are going on today...you now, reducing arms and....I try to think of the good things...and then I go do something (play volleyball?) (laughs)..yeah.
(prompt about discussion at home, friends, school?)...well, not very often...sometimes...like if the subject ever came up (at home)...like we don't make it a

regular thing! And my friends....maybe I have...I remember talking to my best friend...(make you feel better?) no (laughs)....(in school)..you can't really....the teacher does all the talking, and he's always neutral...so he really doesn't say anything..he just tells us the facts...but I learn more about it so it makes me feel better...than if I didn't know anything.

VII 17= *Like you can't just forget about it...but uh, I just basically try to have fun or somethin...I just...take a Valium or somethin (literally?) ...yeah..like through the last few weeks I've been taking...not lots of valium, but, like I've got one in my pocket for at work like when I feel stressful or somethin. Like the doctor gave me one at the hospital, but my mum has some at home...so I just take one, maybe once every week or somethin...just to help me, and it does, it does help me, like...they're only five mg so...(else?) There's a couple of friends, yeah...like my friend C______'s dad's a minister...he's all right to talk to. Like you know, sometimes we (interviewee and friend) play a game called nuclear war, he's USSR and I'm USA and, you know, that kind of relieves our tension a little bit...we blow the heck out of each other!

VII 20= *I talk (to friends) and get their views and opinions... and we talk about how we can ever change it or something. I feel angry and the anger gets rid of it then....you never know, one day when we're old enough and the politicians actually listen to our opinion, maybe, if all of our views and opinions are strong enough we can actually change something....

VII 18= *I just kind of put it out of my mind. I think of something else..'cause I don't really want to think about it.

VII 19= *I stop and think, "what are the chances of it actually happening?" and I think...very little. And when I watch the news I sit there and I hope that there have been disarmament talks and I hope that there has been peace talks. But then, on the other hand, when WWII started, that's exactly what was going on too...they were all at peace talks and a lot of that going on too.

VII 2= Well I try to push it back in my mind...and think that nothing's really going to happen, because, I mean, if you think the person whose going to push the button is going to blow up himself as well as everybody else...so why would anybody really push it? It makes me feel better....

VII 12= You just block it out kind of thing until it happens then, I guess worry about it. There is nothing you can do if they drop a bomb...you can't really do anything about it, unless you're established and kind of peaceful with them, say, beforehand...

VII 1= I guess I think about how to survive...like what to do for survival. All I know is from that movie (TDA) and that stuff and that's all. Sometimes...I think about the Rapture (make you feel better?) I don't know...because I might not be taken... you have to be " saved."

VII 14= Well sometimes I'll just sit and talk to a friend. And just talk, talk, talk, TALK...it's like a...I can't really do too much more...I won't scream or yell, I'll just, get it...talk about it and it will make me feel better when I think about it. And then there will be other times when I just "bottle up" and won't say anything. Just put it to the back of my mind where I won't get it.

VII 15= *Well, get prepared. We should start getting some guns, weapons; we should find new ways of growing plants without much sunlight; build underground shelters, and if it's possible maybe build underground cities...and, let's see, we should build some more weapons and try to find a way to counter-act the radiation that's going to be outside after a bomb has been dropped.

VII 10= Sometimes I just try to put it out of my mind, 'cause I don't, I don't want to think about it any more. Sometimes I spend just half-an-hour just thinking about what it would be like...or why they built these nuclear arms, sometimes I just put it out of my mind. A lot of times I talk about it. A lot of time I talk to my parents, or my grandfather. I ask their views about it then I state my views...time to think.

VII 11= I don't know. It's... I'm not sure. I think to myself and I answer my own questions pretty much. You can't really deal with something like that. (push it aside?) Yeah.. I guess... pretty much... for now.. for the time being.

VII 5= Think about other things. I just forget about it. I don't think about it.
If I don't want to talk about it anymore or anything so I just forget about it. I don't really like talking about that... stuff. I like to not think it's there 'cause it seems like its not there right now, but ....

VII 3= I can't make it go away. I change the subject and talk about something else. Sleep. Wake up in the morning and feel better about it (reports no nightmares). (Can talk and show feelings to Dad and grandparents about the subject and reports that that makes her "feel better about it")

VII 21= *Look for the things we can enjoy now. Continue to reach for your goals.

VII 13= ...Just "hope and pray" (though made clear not in literal religious sense).

QUESTION: WHAT DO YOU THINK IS THE "BEST ATTITUDE" ONE CAN TAKE TOWARD THE NUCLEAR THREAT?

VIII 6= Be open about it, how you worry about it, I have to open myself to me.

VIII 7 = Don't be afraid , be prepared....like getting a sense of... sometimes defending yourself or do like I said, like being...doing, your stuff right now.

VIII 16= *I'd try to console them...I'll tell them it will happen some time, but there's little you can do about it..so.... 'cause like, you don't have the power you know, like you say anything ..like, if you tell somebody 'stop the war'..nobody will listen to you. They don't care about you, right? right? So you see that you don't have the power and the money...can't do anything about it. That's why I want to be a prime minister...my vision is to be a prime minister...I say something, they will obey me...they will obey my order, you know?

VIII 8= Don't be scared...don't be scared...
..there is something you can do about it...you can protest about it so somebody hears...

VIII 9= Anger. ...for the politician's for letting the nuclear problems happen.
...go around and tell people, people that you know...what's going on with you...how you feel about it.

VIII 4= We should be motivated...we should want to do something about it...not just sit there.......it has to be everyone, or nothing's going to happen...

VIII 17= *"I'm going to die." And that's it. What more can we do if the bombs are ready to land? Like there's lots I'd like to do...but I'm just a kid, like what can I do? (?)I'd like to, ah... maybe talk to the superpowers or somethin or maybe make this kind of thing..how we can exchange...maybe about 100,000 people from N.America with 100,000 from Russia...just let them...we'd all be in a whole society or somethin, and then maybe they'd think 'why should we blow up our own people when they're living over there?' ...they wouldn't want to do that...that's what I think.

You can't hide from it (the reality of nuclear war)...it just then bottles up inside...and then you're really messed up. (Can you do things about it when older?) It depends...it depends on how important I am...like if I'm just a lawyer or something....(indicates defeat).

VIII 20= *You can't do anything about it if you're going to be scared like that...you have to actually go out there and make it change, get more people around you and...make a difference. Because if you're going to be like that when you're this young imagine when you're older? You're not going to have a life to live...you're going to ruin it with the nuclear threat.

VIII 18= *I'd like them to be concerned...to always think about it so that their knowledge will , uh....for things, but, uh....I'd like them to have a care-free attitude about it, in a way. It's always good to joke about it in a way...you know, not to joke about it 'cause I don't think it's funny....but if you're so worried about it...the way people think, if you're so worried about it...it will happen, you know what I mean?, and why get yourself so riled up about it? If a young person came to me, I'd go: "It's always good to be concerned and everything, but also have a sense of 'care-freeness' ."

VIII 19= *I think to encourage them that they can always contribute to preventing a nuclear war. It's only one person but if everyone speaks out I think it will influence a lot of things. There's hope...there's hope for everyone to have some kind of influence for preventing World War III.

VIII 2= Just that...if its going to go off, live your life until it does happen...just make the best of it. Not to really fear it....there's not really anything you can do about it...it's out of my control...

VIII 12= If it happens, it happens. You can't do anything about it. Just keep living your life until it happens...don't worry about it. I guess. Just do what you want to do...because if you keep worrying about it it might not happen and you wasted your life worrying about it.

VIII 1= ("rapture" answer; reiteration of answer just given, see VII 1)

VIII 14= Be very calm for one, and don't let it frighten you [as much as it did me]. (Realize) the danger of it because it is dangerous...it's terribly dangerous it's just something that no one has to go through; or no one should go through. But it is there, so...stay calm but try to do something about it...talk to people about it...to find out more about it so you won't over-react, but you will react in some of a way. The only thing that I can do is just give my opinion and that's about it.

VIII 15= *Personally, I don't think they should have got this started...they shouldn't have invented warheads like this. (But they did), so, I guess we should do something about it...but we can't be passive about it...we got to fight fire with fire. Yeah, we should build more.

VIII 10= "What can I do to avoid it?"..what can I do to stop it? how can I work it out... so there won't be any war. The average citizen...they... I don't know how much the politician will listen. You know some are good, some are not. But I think that it's important that the average citizen expresses their views about what they think and I think that they, that we, should try to settle things without getting into war.

VIII 11= Probably be: "Be scared" and try to stop the... push the government.

VIII 5= If everyone didn't want it... and I know that probably everyone doesn't want it so why don't they just stand up and say, "I don't want this" right? Everyone should do that... obviously it's not going to happen, but...if it could...

VIII 3= Think about it, and what we can do... if we can do anything. Tell the older people and maybe they can do something about it. We can't speak out. We can't tell what we think 'cause....

VIII 21= *(interpretation: took a rather political stance; that we can work at the threat through politics).

VIII 13= "live day by day"